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ABSTRACT

The monograph on severe behavior disorders of children and youth presents 23 papers on juvenile delinquency, behavior disorders at the secondary level, and self control instruction. Some of the papers included are: "A Comparison of Varied Teacher-to-Child Ratio on the Adaptive and Attending Behaviors of Two Autistic Children" (M. Zener, et al.); "Elimination of Self-Injurious Behavior in an Autistic Child through the Use of Towel Screening" (K. McCoy, M. Marietti); "Achievement Gains of Children Hospitalized for Behavior Disorders" (S. Forness, et al.); "The Individualized Education Program Process: Perspectives of Parents of Severely Behaviorally Disordered Children" (E. Edgar, R. Rutherford, Jr.); "The Relationship of Five Affective Variables with Regard to Inner-City Juvenile Delinquents, Inner-City Non-Delinquents, and a National Norm Group: Implications for School Curriculum and Placement" (P. Zionts); "The Contemporary Adolescent Delinquent: Intellectual or Impulsive?" (T. Reilly, et al.); "Self-Concept of Aggressive Youth: Research Implications" (R. Fritsch, D. Lutkemeier); "Trends in Definitions for Emotionally Handicapped and/or Learning Disabled Adolescents" (D. Wells, et al.); "The Least Restrictive Environment for Adolescents with Severe Behaviors: Putting the Pieces Together" (E. Guetzloe); "Behaviorally Disordered Adolescents as Academic Change Agents" (R. Gable, M. Kerr); "An Analysis of the Effects of Various Instructional Procedures on the Oral Reading Performance of High School Special Education Students" (L. Polsgrove, et al.); "Mainstreaming Behaviorally Disordered Children through Teacher Consultation" (C. Nelson, K. Stevens); "A Simplified Contingency System for Establishing and Maintaining Classroom Control in Students Labeled Emotionally or Socially Maladjusted" (C. Van Nagel, et al.); "Review of Self-Control Research with Behaviorally Disordered and Mentally Retarded Children" (R. Rueda, et al.); and "Treatment of Behavior Disorders among Intellectually Gifted Youngsters: Case Studies with a Family-Centered Approach" (S. Cohn, P. Finlay). (CL)

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The Council for Children with Behavioral Disorders is a national professional organization for those interested in the education and well-being of behaviorally disordered individuals. The Council functions to develop lines of communication and interaction among professionals, disciplines and organizations; to promote adequate programs for recruitment, training and consultation; to encourage research and development; to support legislation for services to these children. Toward this end, the Council publishes a quarterly journal, *Behavioral Disorders*, and sponsors national conferences in relation to these interests. An organization of some 4,400 members, the Council maintains central offices at 1920 Association Drive, Reston, Virginia 22091.

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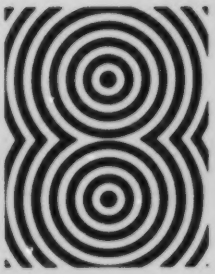
MONOGRAPH in Behavioral Disorders



Severe Behavior Disorders of Children and Youth

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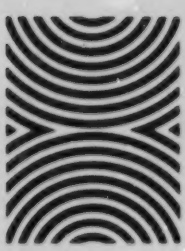

Preface

The editors are pleased to be able to present the third monograph in this series of monographs which emphasizes severe behavior disorders of children and youth. This is an ongoing effort designed to make available the most current information and research related to this area. The problems associated with the treatment and education of behaviorally disordered children continue to be a major concern for the professionals involved in providing services to this population.

It is our hope that this monograph will assist all of us in better understanding and dealing with this phenomenon. These papers once again are the result of the Third Annual Conference on Severe Behavior Disorders of Children and Youth held at Arizona State University on November 15, 16, and 17, 1979. The conference was jointly sponsored by Teacher Educators for Children with Behavior Disorders and the Department of Special Education at Arizona State University, and was endorsed by the Council for Children with Behavioral Disorders. This issue is divided into specific topical areas which reflect the major emphasis of the conference. The areas addressed are (1) Severe Behavior Disorders of Children and Youth, (2) Juvenile Delinquency, (3) Behavior Disorders at the Secondary Level, (4) Teacher Training in Behavior Disorders, and (5) Teaching Self-Control to Behaviorally Disordered Children.

The editors would like to thank the College of Education at Arizona State University and Dr. Robert Stout, Dean of the College of Education, for the continued assistance provided which has made this effort a success.

We would further like to acknowledge the Council for Children with Behavioral Disorders for their assistance in publishing this monograph.

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Jane E. McGlothlin, Ph.D.

A Glimpse of the Past And A Look at the Future

Lyndal M. Bullock

Special education as an identifiable component within the educational structure came to the forefront in the late 1950's. This visibility resulted in large part because of the federal government's activity relative to handicapped individuals. In fact, we as special educators might say that we owe our very existence to the "Big Brother in Washington."

Most of us are familiar with the legislative history that has been a significant part of our heritage. Virtually everyone of us here today owe our professional preparation, either directly or indirectly, to one of the legislative acts which have provided training funds for us to attend school or we have obtained preparation in BEH funded programs or have been taught by persons who have taken advantage of federal funds designated for training personnel to work with the handicapped.

While early concern for the handicapped was directed toward the training of professional personnel to work with the handicapped, more recently the legislative action has focused upon the *direct services* being provided the child with special needs. The evidence of this perhaps is best seen through the passage of two significant pieces of legislation: The Vocational Rehabilitation Act of 1973, Section 504, and PL 94-142: Education of All Handicapped Act of 1975. Educationally, it is virtually impossible to implement one of these laws without the other.

These two pieces of federal legislation, whether we like it or not, are going to, or have, dramatically impacted upon the way we have been doing things.

The public schools have already had to face up to the mandates of providing more appropriate services for the handicapped. They have had to begin to rethink, in many cases, their total delivery models that have been designed and operative within the school districts.

I don't know about the school districts in your geographic area, but in many parts of the country, numerous changes that have had to occur rather rapidly (by educational standards, at least) have been extremely painful—some districts, years ago, bought into one or two special education delivery models (*i.e.*, self-contained classrooms, or segregated facilities, or resource rooms) and have felt that this was the way to appropriately accommodate the special needs of the handicapped. Practically every district I know, has had to readdress its delivery system and make changes in order to comply with PL 94-142.

School districts have had to provide rather massive inservice training to their professional personnel, especially the regular educators, in order to assist them in a whole array of added responsibilities. These responsibilities in-

clude (a) how to work with parents of the handicapped—they are often a different group of folks, in that they are more assertive and more concerned about the appropriateness of the education and learning environment being provided their children; (b) how to work with regular educators who have had to learn how to function effectively on admissions, review and dismissal committees at the local school levels; (c) they are being asked to adapt the day-to-day instruction to accommodate the special child who may be receiving all or portions of his/her instruction within a regular classroom; (d) how to utilize special equipment that might be needed by a special child, (e) how to readjust standards of evaluation to accommodate for individual differences, and the list could go on. Today, I see many school personnel bending and becoming very frustrated with all these new demands.

In addition, faculties in Schools of Education will *also* feel the impact of the mandates. Therefore, we must immediately, if we haven't already done so, begin to examine just what all these changes mean for how we are training teachers.

Two or three years ago we saw the requirement added to many certification formats for at least a survey course in special education to be included in the preservice preparation program for all teachers. The State of Oklahoma, for instance, required that all certificated personnel have this course prior to any certificate renewal. I vividly recall the first semester of implementation of this requirement when about 500 teachers, administrators, and others showed up to take this newly mandated course and the College had no additional funds. The legislature, in its infinite wisdom, failed to provide any dollars to assist institutions of higher education to respond to this requirement. As a result, we hurriedly hired adjuncts, put large sections in auditoriums, and proceeded to "insult" the intelligence of regular educators by lecturing to them about special kids.

Generally, these approaches have not worked. One state, of which I am aware, tried to repeal this requirement after a year of implementation. School personnel with whom I have interacted do not feel that such an approach is sufficient to enable them to respond to the needs of the handicapped.

In the State of Texas we have recently been mandated to infuse four specific requirements into the elementary and secondary education courses without adding any additional hours to the curriculum. I coordinate a special project for the dean to work with the faculty in the infusion process. This is an awesome task even though the faculty committees have been absolutely super to work with—but we are asking that additional content be added to an already bulging curriculum, we are asking faculty with little personal exposure to handicapped children and in many cases with little, if any, formal course work in the education of the handicapped, to provide juniors and seniors with appropriate instruction about how to accommodate the handicapped in the regular classroom.

The handwriting is on the wall that this approach is the wave of the future as evidenced by the distribution of federal dollars by the Bureau for Education of the Handicapped. In fiscal year 1980-81, for example, approximately 34 percent of the total BEH Division of Trainings' budget will go for special education training of regular education teachers.

Other service providers are also going to be affected by forcing a re-examination of the credentials. Insurance companies may even have some effect of controlling qualifications to staff hired by agencies who provide related services to students.

PL 94-142 holds the State Education Agency responsible for the services provided to the handicapped, yet related service personnel often have a licensure procedure within their own discipline/professional, which is not under the control of the SEA. How can the SEA be assured that the related service personnel are indeed qualified to deliver the service to a unique population? The integrity factors are going to force SEA's to think about a series of options relative to personnel regulatory practices.

The policies existing within states relative to providing services to the adjudicated handicapped pupil are going to have to undergo extreme scrutiny. The SEA is enpowered by PL 94-142 to also supervise the provisions of the Act relative to all other state agencies that provide services to the handicapped. Thus, state correction agencies must provide all the same safeguards for the handicapped as the public schools and be monitored by the SEA. PL 94-142 not only affects instruction but impacts with a constancy of legal responsibilities and liabilities previously not encountered by public schools or state agencies. There are several recent law suits regarding the right to services of the adjudicated handicapped, (*Doe* v. *Henderson, Tennessee*; *Val Rainey* v. *Tennessee Dept. of Education; Mattie T.* v. *Holladay*, Mississippi).

It becomes rapidly evidenced that the entire delivery process for the handicapped is being re-examined and is undergoing some rather dramatic changes, whether we like it or not . . . changes in which all professionals in special education are either very much involved or who soon will be.

I would like to address some of the issues and concerns that are related to the delivery of services to the emotionally disturbed.

Programs for the emotionally disturbed or behaviorally disordered are a relatively new area of service for the public schools. As most of us are aware, traditionally disturbed children received services through mental health centers and residential treatment centers.

Public schools, nationally, have more readily responded to specialized services for other types of handicapped than they have for the emotionally disturbed. This is understandable, in that early psychiatric intervention models tended to minimize the value of education in the treatment process. Also the inability of school districts to be able to secure appropriate related services for the emotionally disturbed have inhibited program development. For example, a few years ago, in the State of Florida, we were grapling with how to deliver mental health services to children in rural areas when two-thirds of the counties did not have a pediatrician to provide even basic health services. The label of emotional disturbance has also had a stigmatizing effect often leaving these children without a viable parent group to lobby for their rights and needs.

Sometime ago I was working with a group of teachers in East Texas and we were discussing how to work with children with special needs and their families. These teachers had very different concerns—they served children who

came from rural homes who didn't even have outdoor priveys, and no water—not just lack of running water, but lack of pumps, therefore, they could only bathe whenever it rained or they used the creek or pond.

It's hard to deal with special learning and management problems when the social problem is even more glaring.

Undoubtedly, there are numerous other reasons that special services have not developed for the emotionally disturbed—some of these reasons are issues among we professionals who profess to know something about how to deal with these kids.

Public school services for the emotionally disturbed are becoming more available as evidenced by national statistics. In 1963, of the 79,500 emotionally disturbed pupils being served, 30,800 were being served in public school programs. In 1971, of the 113,000 emotionally disturbed pupils served, about half were being served in public school programs. In 1977, about 288,000 emotionally disturbed pupils were being served in educational programs. Although these figures represent a rather dramatic growth in services, the emotionally disturbed population remains one of the largest unserved populations of handicapped pupils in the U.S. today. It is estimated that during the 1977-78 school year there were about 740,000 emotionally disturbed pupils (72 percent) who were unserved.

Recently, I was asked to chair a national conference focusing on the Seriously Emotionally Disturbed to be sponsored by the International Council for Exceptional Children. In designing the call for papers, I spent a lot of time talking with colleagues and professionals from our discipline, as well as those from allied disciplines across the U.S., to ascertain what the current issues really are. Several specific topics emerged which I shall present, some of which I will comment on briefly. Incidentally, in thinking about these, several are the same issues that we were grapling with years ago when I first became involved in special education.

Legal issues which affect definition and prevalence.

In a soon to be published paper by Dr. James Kauffman, fear is expressed that the effects of PL 94-142 could have disasterous consequences for the majority of disturbed children because of the way definition and prevalence are handled.

First of all, the rules and regulations that accompany the law and that describe the population are derived from Bower's (1969) definition, a definition that leaves the decision of whether or not a child is disturbed to clinical judgment. But then there is a clause appended to it (PL 94-142) which says that children who are socially maladjusted but not emotionally disturbed are *not* included.

Are we really to believe that that exclusionary clause will not make a bureaucratic nightmare of attempts to provide appropriate education for kids whose behavior gets them into serious trouble but who can be ignored on a technicality because there is a mental health expert willing to say that the child's difficulty is not due to disturbed emotions?

4 Disturbed children are defined, for purposes of PL 94-142, in a loose

enough way that we could include just about any child we wanted; and just about any child could be excluded if it were convenient.

Definition provides the basis for prevalence. And something disturbing is happening with prevalence estimates. For years, the Bureau for Education of the Handicapped has estimated that 2.0 percent of the school-age population is disturbed, a figure which most of us believe to be very conservative. The government is now finding that a head-count of disturbed children served by special education is turning up just less than 0.5 percent. Why the discrepancy? One hypothesis is that many of the disturbed children are being served under other categories, such as mentally retardation or learning disabilities. Another hypothesis is that there really aren't as many disturbed children as we thought—that BEH overestimated the number by a factor of 4, an idea which experts refute. Let us *consider another alternative explanation*.

When the law went into effect in September, 1978, it said that *all* children identified as disturbed had to be served. Just prior to that time, BEH figures showed that about 25 percent of the estimated number of disturbed children were receiving services. It makes sense to believe that PL 94-142 had the effect of freezing services at the level (in terms of number of children served) provided when the law took effect, *i.e.*, at about .5 percent of the school population. Why and how could it do that, one might ask, since the law states that all disturbed children must be identified and served? It's fairly simple. A child is disturbed when some authority says he is. If it isn't convenient to call a child disturbed, who is to say the school must? And why should the schools go out of their way now to identify and serve these children? Identification and service are now a unity by legislative act. You *can not* say there are disturbed children in your school but that you haven't resources presently to serve them.

Social policy may have potentially damaging (restrictive) effects upon services!

What is the most appropriate intervention model for emotionally disturbed children?

While I generally support the concept of the least restrictive environment, it is a global term which is often ill-defined and often left to individual interpretation. Thus, I have many concerns about what I see happening to emotionally disturbed children in relation to this concept. The resource room concept—where the child leaves the regular class for some portion of the day for special instruction—often does not provide for consultation time between regular teacher and special teacher. If this is missing—what is really special about special education for the emotionally disturbed student? This approach, to me, is similar to the 50-minute "therapeutic trip" where the individual is left without appropriate support for the other 23 hours.

I (cautiously) believe this type of intervention approach to be little more than an administrative ploy to illustrate that a lot of children are receiving services without addressing the quality nor the generalizability of such services.

Enough of my biases. Regardless of the models, there needs to be a full

continuum of services available within a district because no one model is adequate for all children!

What is autism? Who are the autistic, and what do we do about it?

The topic of autism is one of the hottest topics in the field right now. Parents of autistic children rapidly are becoming a strong lobby. In our State, they were instrumental in getting autism listed as a separate category—no longer under emotionally disturbed,—which requires a new set of program guidelines, teacher credentialing and all that goes with it. In the State of New York, autism was recently placed under Developmental Disabilities.

Will autism eventually become as much a potpourri as the general category of emotional disturbance?

What alternative approaches could be/should be employed to educate the emotionally disturbed?

This is a topic especially critical with adolescents—should we not immediately explore career education and/or work study programs of some sort designed to enhance their feeling of self-worth and accomplishment while at the same time providing alternatives to learning?

What about the use of alternative schools that have different standards of conformity and greater therapeutic support systems among a caring and trained staff?

This issue is a topic that was recently addressed through an Invisible College of the Council for Exceptional Children.

Cooperative efforts among agencies and institutions who serve the emotionally disturbed must increase if we are to accomplish our goals for intervention.

We must take more definitive steps to communicate with and coordinate effort with mental health, juvenile courts, and child welfare personnel. The Privacy Act has impeded alot of sharing of data relative to specific clients.

Issues around teacher preparation and service delivery models

How do we recruit personnel to commit themselves to work with these kinds of kids?

Once committed, how do we train them? Should the training be categorical or noncategorical?

Should preparation be unique to special populations such as teachers in state training schools for adjudicated pupils, for teachers in residential treatment centers or teachers in other special settings?

What are appropriate inservice models for credentialing and for providing avenues for off-campus, field-based degrees?

There are issues around instructional procedures

How can the affective and cognitive domains be more appropriately combined?

For many years the field has been somewhat polarized between the behaviorists and humanists. Probably neither have been as effective as they might have been had polarization not been there.

What are the appropriate continuous measurement procedures for analyzing social and academic behaviors that are both effective and efficient for use by classroom teachers?

Supportive services to families

More and more parents are being requested to participate in the decision-making process for their children's educational program. What can parents and professionals learn from each other which will enable both to be capable of fulfilling their respective responsibilities relative to predefined intervention strategies?

Often the greatest support comes from having adequate knowledge on which to base decisions. Both parents and professionals have a need for accurate information.

Administrative issues

How can greater cooperation exist between universities, State Education Agencies (SEA's), and Local Education Agencies (LEA's) in providing training which is competency specific?

I see some very saddening things happening. SEA's and LEA's are not really working closely with local universities and provide training. I am not implying that University faculty should do all the training nor that they have all knowledge, but for SEA's and LEA's and Universities to develop isolated training programs and formats does a disservice to everyone involved.

How do we prevent teacher burn-out?

This is a topic that is frequently discussed these days. I have often heard people talking about preparing or setting up systems for teachers to rotate out of programs for the emotionally disturbed for a mental health reprieve. *Instead*, why don't we find ways to impact upon employing agencies/institutions to provide ongoing mental health support that is necessary in order to maintain qualified personnel in these positions.

Such an approach would be less expensive to the employing agencies over the long haul and it would inevitably assist those teachers affect to feel better about themselves and to allow them to continue to perform at optimum levels in programs designed for those children to whom they have made a professional commitment.

I am certain that there are many other issues in the field, but hopefully, I

have given you an idea of how far we have yet to go before we can begin to feel good about what is happening to the disturbed children in our society.

You and I must try to design educational services, at all levels, so they are habilitative in nature and thus diminish the need for increasing rehabilitative services.

John F. Kennedy, in his speech to the 88th Congress, pointed out that emotional disturbance effects more families, places more strain upon the public treasury, and causes a greater loss of human potential than any other condition in the United States.

Let's find a way to do our part to help this very special population—a better way, a way that is more effective, and a way that demonstrates a sense of urgency and caring.

Lyndal M. Bullock, Professor, Division of Special Education, North Texas State University, Denton, Texas.

A Comparison of Varied Teacher-To-Child Ratio On the Adaptive and Attending Behaviors of Two Autistic Children

Michael Zener, Alfonso Prieto, and Stanley Zucker

INTRODUCTION

The education of autistic children in the classroom presents even the most highly trained practitioner with the challenging task of on-going assessment of the optimal educational environment for each child. Frankel (1976) discusses the various environmental options available to the teacher of the autistic child, each option having the potential of markedly affecting a child's academic performance. These options, generally, focus upon the areas of curriculum delivery, optimal type and schedule of reinforcement, and the effects of the presence of other students in the same teaching situation.

In the assessment process, the teacher is often faced with, as Guskin and Spicker (1968) point out, the shortcomings of traditional research methodologies in making definitive decisions with such heterogeneous group of children. In dealing with autistic children in a classroom setting, the teacher's role is extended to that of an educational researcher whose task is to examine completely each aspect of the teaching-learning interaction. Blatt and Garfunkel (1973) emphasize the evaluation of a variety of methods across varied settings in studying individual children and how they change in different educational environments. Systematic observation of the classroom behavior of an autistic child is, thus, essential in order for the teacher to answer some of these important environmental questions.

One such question relates to the decision regarding the general applicability of the one-to-one teacher-to-child ratio. This is a crucial point in the ongoing assessment of autistic children. Most professionals would agree that a developmental goal for these children is movement to small group learning situations. As Flaherty (1976) points out, these situations more closely approximate community classroom environments and thus are more desirable. The issue of one-to-one vs. group treatment is not, therefore, viewed as a question of movement into a group. It is, rather, viewed as a process of systematically assessing the optimal time for such a change. This assessment must take into account a variety of behavioral, developmental and cognitive factors; *i.e.*, in seat, attending to task.

Lovaas and Koegel (1973) state that a large majority of research investigating variables in the treatment of autistic children has utilized a one-to-one teacher-child ratio. A one-to-one teacher-child ratio, for example, was employed with autistic children by Wolf, Risley and Mees (1964) to modify tantrum behavior; by Hewett (1965), Lovaas (1966, 1969), and Risely and Wolf (1967) to establish functional speech; by Lovaas, Freitas, Nelson and Whalen (1967) and Metz (1965) to condition generalized imitation; by Hewett (1964, 1966) to teach reading skills, and by Marshall (1966) to establish self-help skills. Koegel and Rincover (1974) state that although operant procedures in one-to-one treatment have been extremely productive in a variety of situations and with diverse behaviors, such procedures have not been systematically investigated in the classroom setting. Furthermore, Frankel and Graham (1976) indicate that some researchers have been willing to make generalizations as to optimal environmental factors present in the teaching situation, but these were made largely as a result of clinical experience.

While most researchers look to the group on an eventual goal, many of those who have dealt with autistic children in classroom settings view long term one-to-one teacher-child ratio as necessary for the education of autistic children (Birnbrauer, Bijou, Wolf, and Kidder, 1965; Coffey and Weiner, 1967; Graziano, 1970; Hewett and Blake, 1973; Lovatt, 1962; Openheim, 1974). Other researchers, through not utilizing systematic assessment techniques in terms of the one-to-one variable, nonetheless have demonstrated success for group teaching of autistic children (Fisher and Glanville, 1970; Halpern, 1970).

Interesting to note as well as Blatt and Garfunkel's (1973) contention that mentally retarded children are not influenced by the parameter of teacher-child ratio. In work with mentally retarded populations, other researchers have again lent support to both one-to-one treatment (Gardner, 1971; Wagner and Sternlicht, 1975) and group treatment methods (Bigelow and Griffiths, 1972; Davis, 1969; Fielding, 1972; Storm and Willis, 1978).

Koegel and Rincover (1974) systematically investigated the feasibility of modifying the behavior of autistic children in a classroom environment. Eight autistic children were taught certain basic classroom behaviors that were assumed to be necessary for subsequent learning to take place in the classroom. These behaviors included attending to the teacher upon command, imitation, and an elementary speaking and recognition vocabulary. Based on research documenting the effectiveness of one-to-one procedures for modifying such behaviors, these behaviors were taught in one-to-one sessions. The authors found, however, that behaviors taught in a one-to-one setting were not performed consistently in a classroom-sized group (eight students to one teacher). This was also found in a group as small as two children with one teacher. In addition, the children evidenced no acquisition of new behaviors in a classroom environment over a four-week period. Given these results, the authors proceeded to introduce a treatment procedure based upon fading into the classroom stimulus situation from the one-to-one stimulus situation. Such treatment was found to be highly effective in producing both a transfer in stimulus control and the acquisition of new behaviors in a kindergarten/first grade classroom environment.

Forness (1974) has pointed out that emphasis has been given to alternate methods of evaluating autistic children, particularly in providing meaningful information about the child's educational progress. One such method (Graham, 1972) has utilized direct observation of autistic children in brief simulated teaching situations. In each situation the tasks, reinforcers, and teaching settings are systematically varied. Similar to assessment techniques derived previously from operant work with retarded children (Lindsley, 1964), measurements centered around frequency or duration of attending behaviors, response latency, verbalizations and descriptive acts.

Based, in part, upon the method cited above, Frankel and Graham (1976) used systematic observation techniques to assess the adaptive performance, attention, and maladaptive behavior of retarded and autistic preschool children. Two groups of six children, previously diagnosed as autistic and mentally retarded, were observed for seven 20-minute sessions. The following environmental parameters were manipulated: teacher-child ratio, presence of food reinforcement, and skill area being presented. Given the data provided from direct and systematic observation, the results suggest that food reinforcement and the one-to-one teacher-child ratio may not generally enhance adaptive performance, but may have an effect upon attention and tantrum behavior. Also, attention to task was found to be more predictive of adaptive behavior than attention to teacher. Furthermore, interactions were generally lacking between the above parameters and diagnostic group, while level of functioning did show such interactions.

The results of the studies cited above support the practice of systematic behavioral observation with autistic children. Also, the techniques utilized provide a framework in which individual differences can be measured and used to design effective educational environments.

The purpose of this investigation was to compare the intra-individual differences in adaptive and attending behaviors of two autistic children upon varying the teacher-child ratio from a one-to-one to a one-to-two situation. Tasks in a variety of language, pre-academic, social and motor skill areas were, at the time of the experiment, taught to these particular students using a one-to-one teacher-child ratio. A modified and abridged version of the procedure proposed by Frankel and Graham (1976) was utilized to systematically assess the subjects' ability to move into a group teaching situation.

METHOD

Subjects

The two subjects were members of a self-contained class for autistic children in a suburban elementary school. Subject 1, a seven-year-old male, was completing his second year in the autistic program. He had previously been placed in a program for trainable mentally handicapped students. Subject 2, an eight-year-old female, was completing her third year in the autistic program. No information was available regarding her previous placement. A multi-disciplinary team consisting of a psychologist, teacher, occupational therapist, and speech and language therapist was directly involved with placement of the subjects in the autistic program. The specific identifying characteristics outlined by Creak (1961) served as the guideline for place-

ment. At the time of placement, both subjects were described as severely impaired in all phases of language acquisition, with no social interaction of any description. Lack of intellectual development or retardation was observed in certain areas of functioning, while both subjects did exhibit normal or superior abilities in other areas. At the time of this experiment, both subjects had attained a skill level in the area of language where they were able to use 1-2 words in response to questions and in making demands. An IQ was not available for either subject due to an earlier determination of untestable status. The following developmental information current with this experiment was available for each subject and is provided in *Table 1*.

Setting

The physical setting involved a table 1.2 m × .7 m × .6 m, located in a learning area within the classroom. This particular classroom was partitioned

TABLE 1

Average Ages of the Total Skills Achieved on the Monterey County Pupil Developmental Progress Scale, Level 1

	Subject 1	Subject 2
Motor Development		
Gross Muscle	2-7	3-11
Fine Muscle	2-7	3-6
Social/Emotional		
Social Skills	2-9	2-7
Self-Development	2-6	2-6
Cognitive Skills		
Self-Awareness	1-6	2-7
Sensory Perception	2-4	2-10
Quantitative Concepts	3-0	3-0
Communication		
Receptive Skills	1-9	2-9
Expressive Skills	1-11	2-4
Self-Help		
Eating Habits	2-6	3-3
Dressing	2-6	3-3
Personal Care	2-9	3-4
Health	3-6	2-9
Travel	2-6	2-10
Safety	2-5	3-0
Individual Expression		
Music and Rhythms	2-3	2-9
Arts and Crafts	2-9	2-11
Recreation	3-0	3-0

into smaller learning areas using one of the walls of the room and two mobile classroom dividers. Thus, three sides of each learning area were enclosed. The specific learning area chosen for the experiment measured approximately 2.5 m × 1.8 m. The subjects were familiar and comfortable working in this area, and it was thus the site for each session.

During the one-to-one sessions the subject sat at the table directly across from and facing the teacher. The width of the table, .7 m, separated the teacher and subject. During the one-to-two sessions, the subjects sat directly next to one another at the table, facing the teacher who was seated across and at an equal distance from each subject. Again, the width of the table separated the teacher and subjects.

Given the absence of a one-way mirror, the investigator sat approximately 2 m outside the learning area. Since one of the sides was not enclosed, an unobstructed view of the subjects and teacher was possible.

Procedures

The experiment involved two consecutive 15-minute sessions for eight school days, divided equally over a two-week period. For this investigation two versions of a cognitive task, referred to as Task A and Task B, were developed for use in both one-to-one and one-to-two teaching situations. A graduate intern who had been working with both students since the beginning of the school year conducted the teaching sessions. The sessions were run as follows: During Week 1, at 10:30 a.m., Subject 1 received one-to-one instruction in Task A. At 10:45 a.m., Subject 2 joined Subject 1 and the teacher for one-to-two instruction in Task B. This format was used for the first Monday through Thursday, during which Subject 1's behavior was measured across teaching situations. For the one-to-two sessions during this first week, Subject 2 served as the second subject in the teaching situation. During the second week, at 10:30 a.m., both subjects received one-to-two instruction in Task B. At 10:45 a.m., Subject 2 received one-to-one instruction in Task A. This format was used for the second Monday through Thursday, during which Subject 2's behavior was measured across teaching situations. Subject 1 served the function as the second subject in the teaching situation during this second week's one-to-two sessions. The format is summarized in *Table 2*.

The particular sequence in the format regarding the teaching situation, *i.e.*, 1:1, 1:2, 1:3, 1:1, and the task, *i.e.*, A, B, B, A, was manipulated in such a way

TABLE 2
Format for the Experimental Sessions

	Session	Time	Subject	Situation	Task
Week I	I	10:30	1	1:1	A
	II	10:45	1 and 2	1:2	B
Week II	I	10:30	2 and 1	1:2	B
	II	10:45	2	1:1	A

as to attempt to counterbalance any order effect which may have hindered or enhanced the adaptive performance and/or attending behavior of the subjects.

The following is a description of the discrete trial format (Santa Barbara Autism Project, 1977) and tasks used in the experiment.

In a one-to-one session, when Task A was performed, the subject was presented with five picture cards of common fruits, *e.g.*, pear, banana. The directions required the subject, upon request, to hand the teacher two of the fruit cards, *e.g.*, "Give me apple and banana." A correct response was judged as the subject's successful retrieval of the two stimulus cards, not necessarily in sequential order. This retrieval included both picking up the correct cards and handing them to the teacher. During subsequent trials, the subject was asked for different combinations of two stimulus cards.

In the one-to-two sessions, trials were alternated, back and forth, between the subjects so as to provide each subject with the same number of trials per session.

When using Task B the directions and performance criteria remained the same. The difference was that instead of using fruits as the stimulus and distractor cards, vegetable cards were used. The subjects' teacher verified the similarity of level of difficulty in Task A and B. The subjects, in a daily session involving a "discussion" of the lunch menu, were previously exposed to each food card that was used. Thus, it was judged that the subjects had developed a sufficient degree of familiarity with all of them. The teacher also verified that the tasks were concurrent with both subjects' level of cognitive functioning.

Upon successful completion of a trial, the subject received secondary reinforcement in the form of verbal praise and a hug or tickle. No response or an incorrect response was simply ignored, and a new trial was initiated. A primary reinforcer was distributed upon completion of each session. Carob chips, a common reinforcer used in the classroom, was chosen as this reinforcer. The type and schedule of reinforcement was controlled across teaching situations.

During each of the sessions, the teacher was responsible for recording the subjects' adaptive performance. Adaptive performance was measured by a *response* score and a *correct* score. The response score was counted as the number of times the subject initiated touching responses with the materials involved in the task without the assistance of prompts other than the teacher's initial verbal directions. So, for each trial the subject received an X each time he followed directions without further prompting and an O if he did not. The correct score was counted as simply the number of correct and incorrect responses made by the subject according to the criteria stated earlier.

The investigator recorded attending behavior during each session. Attending behavior was measured in terms of *redirects, attending to task* and *attending to teacher*. Redirects were counted during each session as the number of times the subject under observation got out of his seat and therefore had to be directed back to the task by the teacher. This constituted a simple frequency count. For measurement of attending to task and attend-

ing to teacher, a time sampling technique was used. Each 15-minute session was divided into 60 15-second intervals by use of a tape recorder, which emitted a low-volume "beep" at the end of each interval. Precautions were taken to ensure that the tape's volume was low enough so as to not distract the subjects. Attending to task was counted at every 15 and 45 second mark of a session. For this category the subject under observation received an X or O depending on whether or not he was making eye contact with the materials involved in the task at the time of the count. Attending to teacher was counted at every 30 second and minute mark of the session. For this category, the subject received an X or O depending on whether or not he was making eye contact with the teacher's face or upper part of the teacher's body at the time of the count.

Thus, for each subject behavior was measured in both 1 : 1 and 1 : 2 teaching situations. Data were collected in five categories of adaptive and attending behavior. These categories included initial response to stimulus, correct response, attending to task, attending to teacher, and redirects.

RESULTS

Adaptive and attending behavior data were graphed for comparison purposes. Figure 1 is a representation of each subject's adaptive performance and attending behavior across teaching situations. Since the number of trials was not exactly the same across all of the sessions, the response scores and correct scores were converted into percentages. In addition, each session was not exactly 15 minutes as planned. Therefore, the scores obtained for attending to task and attending to teacher were also converted to percentages. The percentage data for each experimental session is provided in Figure 1, including the frequency of redirects.

Tables 3, 4, 5, and *6* report the mean percentile data for each phase of the experiment.

In terms of initiating responses to the stimuli involved in the tasks, *Table 3* shows that both subjects performed at or just under 100 percent accuracy in each phase of the experiment.

The second category of adaptive performance is summarized in *Table 4*.

It was found that Subject 1's correct responses were 10.5 percent greater in the trials during the 1 : 2 phase than in those during the 1 : 1 phase. Subject 2, though, responded correctly in 45 percent more of the trials during the 1 : 1 phase than the 1 : 2 phase.

According to *Table 5*, behavior defined and measured as attending to task showed similar results for both subjects with respect to the time sampling technique that was used.

Subject 1 attended to task 17.3 percent more of the time during the 1 : 1 sessions than during the 1 : 2 sessions. It was also found that Subject 2 attended to task 14.3 percent more of the time during the 1 : 1 sessions than during the 1 : 2 sessions.

The results for the time sampling measuring behavior defined as attending to teacher are summarized in *Table 6*.

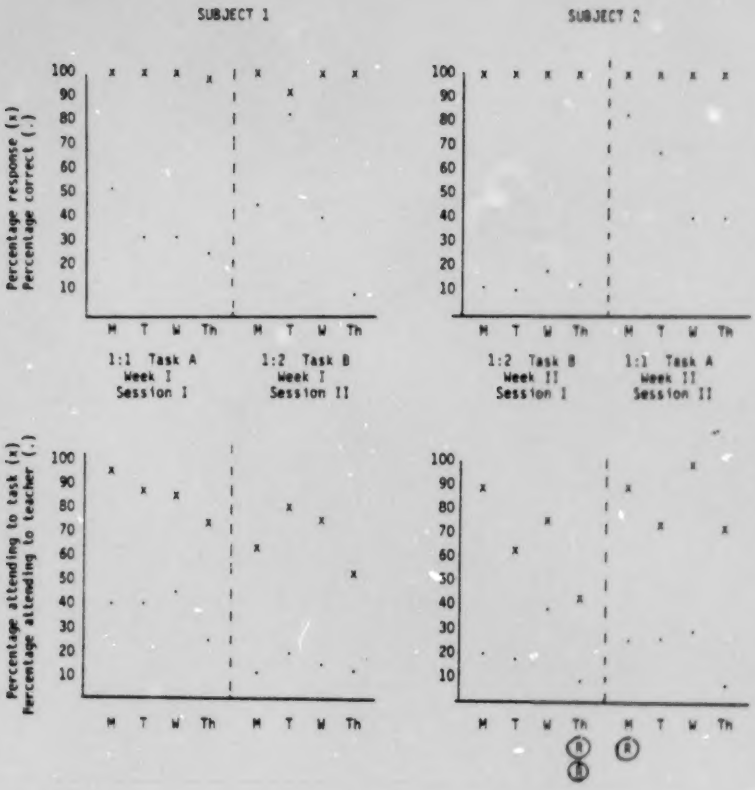

FIGURE 1
Percentage data for each experimental session

It was found that Subject 1 attended to the teacher 23 percent more of the time during the 1:1 sessions than during the 1:2 sessions. The results show that Subject 2 attended to the teacher only .3 percent more of the time during the 1:1 sessions than during the 1:2 sessions.

As shown in Figure 1, Subject 1 did not require any redirects during the experiment. Subject 2 required two redirects in the 1:2 phase, both occur-

TABLE 3
Mean Percentage of Responses for Subjects Under 1:1 and 1:2 Situations

Subject	Situation	
	1:1	1:2
1	99.5	98.3
2	100.0	100.0

TABLE 4

Mean Percentage of Correct Responses for Subjects Under 1:1 and 1:2 Situations

Subject	Situation	
	1:1	1:2
1	33.8	44.3
2	57.5	12.5

ring in the same session, while during the 1:1 sessions, only one redirect was required.

The subjects' regular teacher was used to run reliability checks on both the investigator and the teacher conducting the sessions. A reliability check was run on 25 percent of each week's data. During the reliability checks for adaptive performance and attending behavior, the percent agreement for all of the experimental sessions (including the data from both subjects) were as follows: responding to task, 100 percent; responding correctly, 98 percent; attending to task, 94 percent; and attending to teacher, 97 percent.

DISCUSSION

At the outset of this section it is necessary to emphasize that the results summarized above cannot lead to outright, definitive conclusions regarding the most highly effective teaching situation to be employed with either subject. There is considerable value, though, in some of the more tentative and speculative questions which may be raised upon examination of the data. Also, the observational information that was gained during the course of the experiment by this investigator and the subjects' teachers was extremely useful in terms of providing further insight into the learning of these particular students. Tentative conclusions that are specific to the subjects based on the data collected during the experimental sessions will be discussed below.

Given the extremely high percentage of responses summarized in *Table 3* and the rather variable percentage of correct responses (*Table 4*), there does not seem to be a trend toward improvement in frequency of correct responses with a higher frequency of initiation of response. An examination of the upper half of Figure 1 would illustrate this rather explicitly for both

TABLE 5

Mean Percentage of Time Attending to Task Under 1:1 and 1:2 Situations

Subject	Situation	
	1:1	1:2
1	84.3	67.0
2	81.8	67.5

TABLE 6

Mean Percentage of Time Attending to Teacher Under 1:1 and 1:2 Situations

Subject	Situation	
	1:1	1:2
1	37.0	14.0
2	20.8	20.5

subjects. Also, there does not seem to be any difference in either subject's ability to initiate responses when comparing their performance of the tasks in the 1:1 and 1:2 situations. For the particular tasks presented, Subject 1 does not seem to be substantially affected, in terms of percentage of correct responses, by the change in teaching situations (*Table 4*). In fact, he responded more correctly, on an average, during the 1:2 sessions. Further sessions could be utilized to substantiate this particular trend. The comparison for Subject 2 is somewhat more dramatic, where the 1:1 situation seems much more clearly superior in terms of correct responses to the tasks.

The percentage data for attending to task (*Table 5*) shows a similar trend for both subjects. While the difference is not dramatic, both subjects seem to attend to task better, by comparison, in the 1:1 sessions than in the 1:2 sessions. Attending to teacher (*Table 6*), again, presents a more variable picture. Subject 1 does seem to spend a greater percentage of time attending to the teacher in the 1:1 as compared with the 1:2 situation. For Subject 2, this behavior does not seem to be affected by the change in teaching situation.

Since the frequency of redirects was minimal across the sessions, it is not likely that sharing the teacher's attention in the 1:2 situation would necessarily lead to a decrease in in-seat behavior. Certainly it is probable that factors other than teacher attention affect the subjects' in-seat behavior. These factors, specific to the present subjects, will be among those issues discussed below.

As mentioned earlier, ongoing evaluation of the educational environment is a crucial aspect in the planning and implementation of programs for autistic students. When working with these students, we are dealing with a population that is unique in terms of the ways in which subtle environmental manipulations, either controlled or uncontrolled, may produce marked effects in the learning process. In the course of this experiment certain variables interacted to produce the results previously summarized.

One of the more difficult aspects of the experiment was the development of matched cognitive tasks. It was necessary to control, as effectively as possible, for the level of difficulty factor in order to compare the data from the 1:1 and 1:2 teaching situations. It was also important to match the tasks in the same area of cognitive functioning. It would seem difficult to make any concrete comparisons between behavior in 1:1 and 1:2 situations if the subjects are being asked to perform completely unrelated functions. Also, comparisons would be confounded if the subjects were asked to perform

the exact same task in each learning situation. In this case, there would exist much more of an overriding possibility that the subjects' performance in the second week's sessions would be affected by the training provided in the first. The problem thus existed of wanting to keep the tasks close (but not exactly the same) in level of difficulty and to keep the area of cognitive functioning the same in both tasks. According to Figure 1, percentage data for correct responses and attending to task appeared to decrease within each week of sessions. This "week effect" may have been alleviated by running the sessions Wednesday, Thursday, Monday, Tuesday. Yet, an alternative explanation is entirely possible. The trend in *Figure 1* could represent a decrease in the subjects' motivation or interest level for the tasks. The subjects may, quite simply, have grown bored with the tasks. Such a motivational factor should be anticipated and taken into account in planning and implementing such simulated teaching situations in the course of future research.

There were a number of other factors which were viewed as having affected the quality of responses in the experimental sessions. The memory component of the tasks provides a case in point. It was observed that when the subjects repeated the directions verbatim, *e.g.*, "Give me apple or pear," a correct response almost always occurred. This behavior seems to represent more than a meaningless echoing response. It is seen as an attempt by the subjects to process the information with the necessary assistance of an auditory cue. An analogy may be drawn to a person who dials directory assistance on the telephone, is given a phone number, and then repeats it aloud so as to aid in storing this short-term information for immediate use. It is quite possible that the subjects needed the input that the auditory cue provided them in responding correctly to the stimulus. Also worth pointing out is Hermelin and O'Connor's (1970) finding that in autistic children the recall of words is more frequently dependent on the sounds of words rather than meaning. This applies here in terms of the teacher's voice inflections when presenting the stimulus. Although not formally measured, even subtle differences in the amount of emphasis placed on the stimulus words were observed to have an effect on both the subjects' cueing process as described above and subsequent correct or incorrect responses. For the purpose of the experiment, this verbal prompting by the teacher was controlled, as effectively as possible, across sessions.

Another factor affecting quality of response was the potential for distraction, reoresented in the phase of the task involving the motor response. For example, there were occasions when the stimulus was presented, the subject would pick up the correct cards, and would then accidentally drop one of the cards. When this occurred, the final phase of the task, that of handing the cards to the teacher, was almost never completed.

This leads directly to a crucial consideration in terms of the learning characteristics of autistic students. In their behavioral descriptions of autistic children, many researchers (*e.g.*, Creak, 1961; Kanner, 1943; Rimland, 1964) report a pathological preoccupation with particular objects, or certain characteristics of them, without regard to their accepted functions. This manifested itself in the behavior of the subjects in this experiment during many of the trials. When presented with the stimulus, the subjects almost always initiated a response (*Table 3*). This initial response was basically followed with one of three additional responses: (a) successful completion of

the task by retrieving the correct cards, (b) unsuccessful performance of the task by retrieving the incorrect cards, or (c) picking up any number from one to all five of the cards (stimulus plus distractors) and "fixating" on them until the teacher removed them from the subject's hand in order to initiate a new trial. Here a problem arises in defining exactly what constitutes first, a response, and second, a correct response on the part of the subject. For example, if the subject makes contact with any of the cards, but only to "lose himself" in them, so to speak, does this constitute a response? According to the initial defining criteria it does, since the subject is making contact with the materials without any additional prompting. Also, if the subject picks up the correct cards, is then either distracted or begins fixating on them, and subsequently does not hand them to the teacher, does this constitute a correct response? Again, according to the defining criteria, this would not be considered a correct response because successful completion of the task was pre-determined to include handing the correct cards to the teacher. The above are questions of the defining nature. Such questions should be anticipated prior to a teaching situation with not only autistic students but all students.

The individual and systematic behavioral assessment that was conducted in this experiment can be utilized effectively across various skill areas. Its use can be an integral part in the planning of educational environments specific to each student's needs. Tasks matched to the student's level of functioning can be developed in other cognitive areas and phases of the program such as language and self-help training. As previously mentioned, Frankel and Graham (1976) have demonstrated that the technique can also be used to determine the optimal type and schedule of reinforcement for each student. The above information can then be combined with the less formal but highly valuable observational information such as that gathered throughout this experiment. The teacher is thus afforded a more comprehensive assessment on which to base his or her decisions in the ongoing process of planning and implementing effective educational programs for autistic children.

REFERENCES

Bigelow, P., and Griffiths, S. An intensive teaching unit for severely and profoundly retarded women. In T. Thompson and J. Grabowski (Eds.), *Behavior modification of the mentally retarded*. New York: Oxford Press, 1972.

Birnbrauer, J., P[illegible], S., Wolf, M., and Kidder, J. Programmed instruction in the classro[illegible] In L. Krasner and L. P. Ullman (Eds.), *Case studies in behavior mo[illegible]ification*. New York: Holt, Rinehart & Winston, 1965.

Blatt, B., and Garfunkel, F. Teaching the mentally retarded. In R. M. Travers (Ed.), *Second handbook of research on teaching*. Chicago: Rand McNally, 1973.

Coffey, H. S., and Weiner, L. L. *Group treatment of autistic children*. Englewood Cliffs, N.J.: Prentice-Hall, 1967.

Creak, M. Schizophrenic syndrome in childhood: Progress report of a working party. *Cerebral Palsy Bulletin*, 1961, *1*, pp. 501-503.

Davis, W. E. An approach to programming for severely and profoundly retarded adults. *Training School Bulletin*, 1969, *66*, pp. 100-104.

Fielding, L. Initial ward-wide behavior modification programs for retarded

children. In T. Thompson and J. Grabowski (Eds.), *Behavior modification of the mentally retarded*. New York: Oxford Press, 1972.

Fisher, I., and Glanville, B. Programmed teaching of autistic children. *Archives of General Psychology*, 1970, *23*, pp. 90-94.

Flaherty, B. An education evaluation procedure for atypical preschool children. In E. Ritvo, B. J. Freeman, E. Ornitz and P. Tanguay (Eds.) *Autism: Diagnosis, current research and management*. New York: Spectrum, 1976.

Forness, S. R. Educational approaches to autism. *Training School Bulletin*, 1974, *71*, pp. 167-173.

Frankel, F. Experimental studies of autistic children in the classroom. In E. Ritvo, B. J. Freeman, E. Ornitz and P. Tanguay (Eds.), *Autism: Diagnosis, current research and management*. New York: Spectrum, 1976.

Frankel, F. and Graham, V. Systematic observation of classroom behavior of retarded and autistic preschool children. *American Journal of Mental Deficiency*, 1976, *81*, pp. 73-84.

Gardner, P. *Behavior modification in mental retardation*. Chicago: Aldine Atherton, 1971.

Graham, V. *Development of a behavior baseline rating scale for educational assessment of preschool autistic children*. Unpublished master's thesis, University of California at Los Angeles, 1972.

Graziano, A. A group treatment approach to multiple problem behaviors of autistic children. *Exceptional Children*, 1970, *36*, pp. 765-770.

Guskin, S. L., and Spicker, H. H. Educational research in mental retardation. In N. R. Ellis (Ed.), *International review of research in mental retardation* (Vol. 3). New York: Academic Press, 1968.

Halpern, W. The schooling of autistic children: Preliminary findings. *American Journal of Orthopsychiatry*, 1970, *40*, pp. 667-671.

Hermelin, B., and O'Connor, N. *Psychological experiments with autistic children*. Oxford: Pergamon Press, 1970.

Hewett, F. M. Teaching reading to an autistic boy through operant conditioning. *American Journal of Orthopsychiatry*, 1964, *17*, pp. 613-618.

Hewett, F. M. Teaching speech to autistic children through operant conditioning. *American Journal of Orthopsychiatry*, 1965, *35*, pp. 927-936.

Hewett, F. M. The autistic child learns to read. *Slow Learning Child: The Australian Journal on the Education of Backward Children*, 1966, *12*, pp. 107-120.

Hewett, F. M., and Blake, P. R. Teaching the emotionally disturbed. In R. M. Travers (Ed.), *Second handbook of research on teaching*. Chicago: Rand McNally, 1973.

Kanner, L. Autistic disturbances of affective contact. *The Nervous Child*, 1943, *2*, pp. 217-250.

Koegel, R. L., and Rincover, A. Treatment of psychotic children in a classroom environment: I. Learning in a large group. *Journal of Applied Behavior Analysis*, 1974, *7*, pp. 45-60.

Lindsley, O. Direct measurement and prosthesis of retarded behavior. *Journal of Education*, 1964, *147*, pp. 60-81.

Lovaas, O. I. Program for establishment of speech in schizophrenic and autistic children. In J. K. Wing (Ed.), *Early childhood autism: Clinical, educational and social aspects*. London: Pergamon Press, 1966.

Lovaas, O. I. *Behavior modification: Teaching language to psychotic children*. New York: Appleton-Century-Crofts, 1969.

Lovaas, O. I., Freitas, L., Nelson, K., and Wahlen, C. The establishment of imitation and its use for the establishment of complex behavior in schizophrenic children. *Behavior Research and Therapy*, 1967, *5*, pp. 171-181.

Lovaas, O. I., and Koegel, R. L. Behavior therapy with autistic children. *72nd yearbook of the national society for the study of education*. Chicago: University of Chicago Press, 1973.

Lovatt, M. Autistic children in a day nursery. *Children*, 1962, *9*, pp. 103-108.

Marshall, G. R. Toilet training of an autistic eight-year-old through operant conditioning therapy: a case report. *Behavior Research and Therapy*, 1966, *4*, pp. 242-245.

Metz, J. R. Conditioning generalized imitation in autistic children. *Journal of Experimental Child Psychology*, 1965, *2*, pp. 389-399.

Openheim, R. C. *Effective teaching methods for autistic children*. Springfield, Ill.: Thomas, 1974.

Rimland, B. *Infantile autism, the syndrome and its implications for a neural theory of behavior*. New York: Appleton-Century-Crofts, 1964.

Risley, T., and Wolf, M. Establishment of functional speech in echolalic children. *Behavior Research and Therapy*, 1967, *5*, pp. 73-88.

Santa Barbara County Autism Dissemination Project. *Teaching makes a difference: a guide for developing successful classes for autistic and other severely handicapped children, teacher's manual*. Sacramento: California State Department of Education, 1977.

Storm, R. H., and Willis, J. H. Small group training as an alternative to individual programs for profoundly retarded persons. *American Journal of Mental Deficiency*, 1978, *83*, pp. 283-288.

Wagner, J., and Sternlicht, P. Retarded persons as teachers: retarded adolescents tutoring retarded children. *American Journal of Mental Deficiency*, 1975, *79*, pp. 674-679.

Wolf, M., Risley, T., and Mees, H. Application of operant conditioning procedures to the behavior problems of an autistic child. *Behavior Research and Therapy*, 1964, *1*, pp. 305-312.

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A Progress Report on David, One Year Later

Felix Billingsley, Richard Neel, and Robin Munson

INTRODUCTION

In an earlier report (Neel and Billingsley, 1979), we described our work with David, an 11-year-old pupil at the Experimental Education Unit. At one point or another in his life, he had been labeled psychotic, aphastic-like, behavior disordered, and autistic, with autism being the usual diagnosis. When David came to the Unit, he had many interesting, dramatic, and occasionally repulsive behaviors in his repertoire. When required to perform academic tasks, he often emitted severe tantrums, complete with screaming, kicking, and hitting. If you attempted to ignore the tantrums, or restrain him, he was likely to either vomit on you, or magically bring forth a nosebleed. His speech was also highly bizarre. He would laugh or squeal for no apparent reason, use personal pronouns incorrectly (*e.g.*, "He has to work now."), or produce high-pitched voice inflections, often coupled with verbalizations inappropriate to the situation. Obviously, these behaviors had been successful in allowing David to manipulate his environment for years. In addition to these disruptive behaviors, he continually engaged in echolalic speech, both immediate and delayed.

The sorts of inappropriate verbalizations described above are nothing new to those working with severely behavior disordered pupils. Certainly, such speech contributed in a large measure to the labeling of the child in the first place. We, therefore, set about to develop and implement a program to teach David to converse appropriately in a classroom setting. The specific goals of the program were to, at least, reduce David's inappropriate speech to a low level and to teach him to respond appropriately within teaching conversations where he would have to respond verbally to instructions presented by the classroom teachers. The goal was not to "cure" David, but rather to increase his acceptability within the classroom social context and to facilitate appropriate responses to instructions.

The approach was task analytic. We determined (speculated) as precisely as possible what steps a child like David would have to go through to arrive at the goal of appropriate speech within instructional situations. Taking into account that (1) David's inappropriate verbalizations greatly outnumbered his appropriate ones, (2) his inappropriate verbalizations seemed to increase in the presence of other people and increased further whenever people tried to interact with him, and (3) that praise and corrections within the

The work described in this report was conducted at the Experimental Education Unit, Child Development and Mental Retardation Center, University of Washington, Seattle, Washington, 98195. We gratefully acknowledge the patience of David's teachers throughout this program and the able assistance of the many students whose participation in data collection and program implementation made this effort possible.

instructional programs often seemed to stimulate inappropriate speech, the following series of steps were derived. For a more detailed description of the steps, see Neel and Billingsley (1979).

PROGRAM STEPS

Step 1: Withholding of verbalizations when no manager is present.
Step 2: Withholding verbalizations when a manager is present.
Step 3: Withholding verbalizations and responding non-verbally when a manager presents a task non-verbally.
Step 4: Withholding verbalizations and responding non-verbally when a manager presents a task and gives verbal instructions.
Step 5: Manager introduces new task.
Step 6: Verbalizes appropriately during sessions in which a manager gives verbal directions requiring non-verbal response and asks questions requiring verbal answers.
Step 7: Verbalizes appropriately during sessions when manager asks questions requiring verbal answers.
Step 8: Transfer program to classroom in semi-confined area.
Step 9: Fade use of semi-confined area.

REVIEW OF PREVIOUS FINDINGS

Our previous report followed David's progress through *Step 5*, which involved the presentation of a variety of new tasks within the experimental setting. To get there, we proceeded through numerous treatment phases and David taught us many things. We found, for example, that he consistently attempted to control the situation and that he explored each and every procedure for loopholes which would allow him to control. We had to use a tightly structured program with a very strong contingency (his lunch) to eliminate his bizarre speech, and the effectiveness of the generic treatments employed varied dramatically depending on the specific stimulus situation surrounding treatment application. By the end of *Step 5*, however, David's inappropriate speech was maintaining at a zero or near zero level. We had, apparently, gained control. The result, however, was that we now had a very quiet child on our hands. As the goal was not to induce mutism, it was necessary to proceed with tasks which would require verbal responses from David. It was our hope that inappropriate speech could be controlled at a low level by using the lunch withdrawal contingency in the presence of these tasks.

INTRODUCTION OF NEW STEPS

With the introduction of *Steps 6* and *7*, which required verbal responses, it was found that inappropriate responses did, indeed, remain at a zero or near-zero level, even in the presence of questions requiring in the neighborhood of 500 responses per session. As we were preparing to proceed to *Step 8* (transfer the program to the classroom in a semi-confined area), however, it occurred to us that the task analysis was incomplete. At this point, David was not being exposed to procedures which generally accompany classroom programs and which, in the past, seemed to dramatically

increase his rate of inappropriate speech. A new step (*7a*) was, therefore, introduced between old *Steps 7* and *8*. The step, "Introduce common classroom instructional procedures," involved the sequential introduction of praise for correct responses, provision of correct answers for error responses, exposure to tasks which increased in difficulty, and praise for correct responses plus verbal aversives (*e.g.*, "No.") for errors paired with corrective feedback.

Following an increase in inappropriate verbalizations, David was again able to maintain a low level of inappropriate responses under the conditions of the new step. We then moved to *Step 8*, transferring the program to the classroom in a semi-confined area. David was placed in a corner of the classroom which was partially enclosed by a screen.

DAVID TO-DATE AND SOME RESEARCH IMPLICATIONS

Throughout *Steps 7a* and *8*, David continued the testing for loopholes as noted earlier. His answers to the manager, for example, although related to the tasks, became quieter and quieter until he was whispering most of his responses. Response volume had not been included in the initial definitions of inappropriate verbalizations (Neel and Billingsley, 1979), and it was now necessary to revise our definition to include inadequate volume. Thereafter, David's inappropriate responding once again decelerated to a low level.

It was also noted that changes in the stimulus complex (*e.g.*, the introduction of tasks of increasing difficulty) often produced an increase in inappropriate verbalizations followed by a decrease. In other words, each change would produce a marked, if not long lasting, change in David's behavior. It appeared that when faced with a novel antecedent, David would fall back on behaviors which had, in the past, elicited a predictable response from caretakers and teachers. For children like David, then, changes in behavioral frequency (or strength) may be likely not only when consequences are changed, but when antecedents, or the general structure of programs, are changed as well. Such conditions may constitute powerful discriminative stimuli for inappropriate behavior. The classroom teacher must expect the return of behaviors that were thought to be previously eliminated and attempt to insure that they will not be successful. The number of discriminative stimuli for inappropriate behaviors which must be encountered and responded to without success in order for generalized suppression to occur is unknown. The investigation of controlling functions of antecedents, therefore, would appear to be an important goal for both education and research.

Some additional issues related to antecedent control which might be addressed by future research involve the locus of control. Is the control of inappropriate behavior located within the antecedent stimuli complex or within the change *per se*? The frequent insistence on sameness noted among autistic children presents an interesting problem. Do they resist change in antecedent stimuli because the strength of the reinforcers connected with those stimuli is too low (an acquisition problem)? Or, do they fail to recognize the similarity of antecedents as signals for reinforcement (a stimulus generalization problem)? If the latter is the case, then the failure may be due to the fact that they have failed to discriminate the critical elements of the antecedents (*cf.*, Schreibman, Koegel, and Craig, 1977).

One additional note. It is possible that David, and many other children like him, may never be "cured." We have, however, demonstrated that his behavior may be brought under stimulus control and that this control may be achieved in new situations. The techniques used to obtain this control, however, would admittedly be difficult to administer within most classroom settings. It is necessary that the control now be transferred to interventions and procedures more often found in less restrictive environments. It is toward that end that we are currently working.

REFERENCES

Neel, R. S., and Billingsley, F. F. Research in the modification of deviant behavior of an autistic child: A preliminary report. In R. B. Rutherford and A. G. Prieto, (Eds.), *Monograph in Behavior Disorders: Severe Behavior Disorders of Children and Youth Volume II.* Reston, Virginia: Council for Children with Behavior Disorders, 1979.

Schreibman, L., Koegel, R. L., and Craig, M. S. Reducing stimulus overselectivity in autistic children. *Journal of Abnormal Child Psychology*, 1977, 5, pp. 425-436.

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Elimination of Self-Injurious Behavior in an Autistic Child Through the Use of Towel Screening

Kathleen M. McCoy and Margaret Marietti

ABSTRACT

The purpose of this paper is to describe a treatment program for the elimination of self-injurious behavior (SIB) in an autistic child. The child, an eleven-year-old male student repeatedly hit himself in the right or left temple. The intervention program allowed for continuous daily monitoring during: (A) baseline recording, (B) reinforcement of incompatible behavior, (C) overcorrection, (D) overcorrection and restriction of hand movement and, (E) isolation and reinforcement.

The SIB was successfully eliminated in a period of less than two and one-half weeks following a treatment of isolation and reinforcement.

INTRODUCTION

One of the most distressing and bizarre of human actions exhibited by individuals classified as autistic, brain damaged and severely retarded is Self-Injurious Behavior (SIB). A SIB is a repeated or stereotyped act that produces self-inflicted injuries. The clinical use of the term emphasizes actions which are excessive, unusual, and without any immediately obvious consequences (Baumeister and Rollings, 1976).

Various treatments for SIB that have been studied include the use of strong aversives, especially contingent electroshock (Lovaas and Simmons, 1969; Merbaum, 1973; Stinnett and Hollender, 1970; Tanner and Zeiler, 1975). The use of strong aversives appears to be successful with a short period of treatment and to have enduring effects (Measel and Alfieri, 1976). Legal and/or regulatory restrictions, however, almost preclude the use of contingent electroshock and other strong aversives (Schreibman, 1977).

A more acceptable technique, positive practice overcorrection, has also been shown to be effective in controlling SIB with institutionalized retardates (Azrin, Kaplan, and Foxx, 1973; DeCanzaro and Baldwin, 1978; Epstein, Doke, Sajwaj, Sorrell and Kimmir, 1974). The two major components of the overcorrection procedure consist of: (1) overcorrecting the environmental effects of an undesirable or inappropriate behavior and, (2) requiring the individual to practice, at an intense level, overly correct forms of the desired behavior (Foxx and Azrin, 1973). Restitution and Positive Practice are the two main forms of overcorrection. Restitution is followed in situations

where the individual destroys or is destructive to some aspect of the physical environment. An individual, for example, who kicks a chair over, would be required not only to return the chair to its original position but also to dust and polish the chair. Positive Practice requires the individual to practice correct forms of an alternative behavior. Positive Practice theoretically suppresses SIB through a combination of practice of incompatible behavior, while simultaneously extinguishing the undesirable behavior (Baumeister and Rollings, 1976).

A third approach to the treatment of self-destructive behavior is the systematic establishment of competing behaviors, *i.e.*, differential reinforcement of other behavior (DRO) (Forehand and Baumeister, 1976; Jones, Simmons, and Frankel, 1974; Measel and Alfieri, 1976). A DRO procedure entails systematically reinforcing a response that involves the same motor or orienting components as the undesirable response. For example, reinforcement given for clapping to music can compete with the SIB of hitting or gouging (Lovaas, Freitag, Gold and Kassorla, 1965). In this procedure, the instances of SIB are ignored while the individual is reinforced for engaging in alternative or more socially acceptable behavior.

The purpose of this paper is to describe a treatment program for the elimination of SIB in an autistic child. The use of a DRO procedure, an overcorrection procedure and a combination of isolation and reinforcement is presented.

METHOD

Subject

The subject was an eleven-year-old male student enrolled in a classroom for autistic children at a private school in Phoenix, Arizona. Previous records indicated that B had exhibited a history of SIB. This behavior consisted of hitting himself in the right or left temple very near the eye. According to B's parents the SIB had started only the year before at the time when he was transferred from a public school to a private school.

Design

The design for this study was constructed to allow for continuous daily monitoring during: (a) baseline recording, (b) reinforcement of incompatible behavior, (c) overcorrection, (d) overcorrection and restriction of hand movement and, (e) isolation and reinforcement.

Procedure

B entered the program at the beginning of June. His attendance during the summer was sporadic. During the times he did attend summer sessions, the SIB was not occuring frequently nor did it appear intense enough to warrant an intervention program. Within one week after fall enrollment, the frequency of B's SIB rose from two to 24 hits per day. During this period the hits were observed most often after a task had been presented or someone was looking at B. After having hit himself, B also looked around the room, seemingly seeking attention.

Reinforcement of incompatible behavior. Because of this apparent search for reinforcement and the fact that B was not hurting himself, the SIB was ignored and an incompatible behavior was reinforced. The incompatible behavior was appropriate use of hands, especially while on task. The SIB continued to increase and became more severe. In addition, B began hitting others. (See *Figure 1: Reinforcement of incompatible behaviors*).

Previous observation during baseline suggested that B seemed to hit when tasks were presented. Based on this observation, an intervention program was designed in which one simple task was presented every thirty minutes. The tasks chosen were those that B was able to do independently with little or no frustration. The original intervention of planned ignoring and reinforcement of incompatible behaviors was continued. Although the SIB behavior began to decrease, the rate was not rapid enough. The severity of the SIB was increasing. B was beginning to produce bruises on his face. (See *Figure 1: Simple task*).

Overcorrection. For fear of causing permanent damage to the eye, positive-practice overcorrection was instituted. The overcorrection procedure consisted of having B hold his arms for 5 minutes in each of 3 positions incompatible with hitting. The positions were: (1) arms horizontal, (2) arms vertical and, (3) arms at side. The overcorrection procedure was used only when B was demonstrating SIB while working with an instructor. During independent activities, the planned ignoring was continued.

While the correction phase was in progress, the number of hits per day were prorated. Hits were prorated according to the total amount of time possible for hitting minus the time lost during overcorrection. The behaviors again decreased slightly, but the severity increased to such a degree that B was in

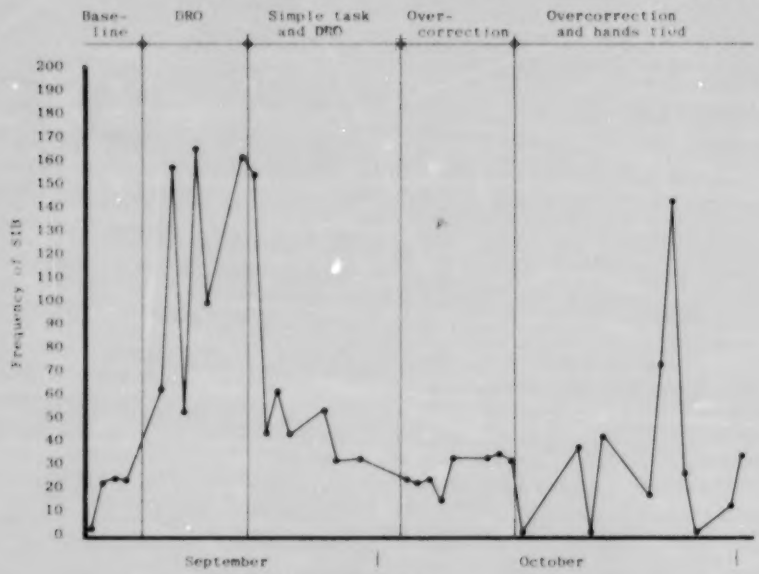

FIGURE 1
Number of SIB per day (September 6, 1977-November 1, 1977)

danger of becoming blinded by detaching his retina. (See *Figure 1: Overcorrection*) B's arms were tied to make it more difficult to hit. They were tied at the elbow and across the back, allowing him free movement to perform tasks, but difficulty in reaching the temple area. The behavior dropped to 0 the first day, and jumped back up so phenomenally by the end of one week that it was virtually impossible to count. During this time two additional behaviors developed which ultimately ended the intervention: (1) B become extremely aggressive with the person involved in administering the overcorrection and made it impossible to complete and, (2) B began using his knees, corners of desks, and any other method possible for hitting himself. (See *Figure 1: Hands tied*)

Interventions Ceased. After a three-day weekend in late October, B entered the classroom with a face so swollen and bruised that the intervention could no longer continue. His eyes were almost swollen shut and he seemed dazed. At this point, all procedures were stopped and a football helmet was placed on B's head.

Within two days of receiving the helmet, B began hitting himself in the chin under the face mask, and this area, too, began to swell. A pad devised from foam rubber was strapped onto the helmet under the chin guard. Although this behavior ceased, a new one developed in which B slammed the backs of his hands on the edges and corners of desks to such a degree that his hands began to swell. Protective mittens were designed, and B spent the next few weeks totally unstructured with no demands being made while at school. He exhibited no SIB while wearing these protective devises.

During this period, data was discontinued and several staffings were held with the two staff psychologists and B's parents. In addition, a staff member from his previous school was consulted. Towel screening had been used the year before with a reported degree of minor success. The towel screening involved covering B's head with a towel. The theory behind the use of towel screening was that the SIB seemed to be reinforced by the child's environment. By eliminating the visual reinforcement, the SIB would be extinguished.

The towel screening had been discontinued at the previous school because the process had become aversive to the staff. B would bite and pinch the staff. In addition, he developed a dependency for the towel and insisted on wearing it around his neck. Removal of the towel had to be faded out once the SIB decreased. It was also noted that the SIB was never extinguished, simply decreased to approximately one incident per week. There was no data available to support this information.

Isolation and Reinforcement. As a result of the staffings, towel screening was implemented. On November 28, a new baseline was begun. The protective mittens were removed and B was required once again to participate in the classroom under the same expectations as held in the DRO procedure. In order to protect the face and allow it to fully heal, the football helmet was left on during the baseline period.

The new intervention consisted of isolating B from the classroom (so as not to disturb the other children) in a special room. This room was equipped with a table, a chair, a cot and a blanket. A towel was pinned around his

neck, and the helmet was removed. B sat in a chair facing the table on which was placed one of 5 tasks. These were tasks that B could do when instructed to "work". Each time he hit, the instructor said "no hitting", pulled the towel over his face and held it there until B exhibited acceptable behavior. A second person stood at the door and collected data. After B worked for 10 consecutive minutes, he was given a break. During the break, tasks were put away, the helmet was replaced and B had 10 minutes of unstructured activity. In most instances he chose to wrap himself in the blanket and lay on the cot. B was also given drinks of water, and taken to the bathroom every thirty minutes. The instructor and two classroom aides took 60-minute shifts throughout a five hour day. The shifts were established to maintain a relationship between all the adults in the classroom and B, and to provide relief for the person working with B.

Data was collected using a time sample for two 10-minute periods per day, one sample during task time, one sample during a combination of lunch and task time. The collector observed for five seconds and recorded for five seconds. The data was computed to a percentage and graphed at the end of each day.

B became extremely aggressive when the towel was applied and began pinching, biting, and pulling the hair of the implementor. In order to continue the program for at least two weeks, B's left arm was tied to the chair during the ten minute task time which enabled the instructor to carry out the procedure.

By the end of the first week, B neither wanted his helmet between tasks nor did he wish to remain in the special room. Because of his insistance, he was returned to the classroom on the third Monday. The same schedule—10 minutes of task and 10 minutes of break—was followed. B handed his helmet to the instructor as he entered the classroom, threw his blanket (that had been used as a reinforcer) in the corner, and willingly participated both on task and off. No SIB was exhibited for the next three days, and school ended for Christmas vacation.

During the intervention, the parents were instructed to allow B to wear his helmet and mittens at home and on the bus. They observed the intervention procedure at school, but did not attempt to carry it out at home. They noted that B continued to hit himself occasionally, but that it ceased entirely the three days before Christmas vacation.

The graph (see *Figure 2*) represents the baseline period and the two and one-half weeks prior to Christmas vacation that towel-screening was implemented. Although the graph shows a decrease in SIB during the baseline, it should be remembered that B was wearing his helmet at the time. Notes collected during baseline indicate that the violent hits became light taps by the end of the baseline period. However, when towel screening was implemented, they again became violent. Aggression toward the implementor also occurred at this time.

The first day of the intervention showed an increase in SIB from 28 percent to 88 percent, and then a drop to 0 percent by the end of the first week. Only on one occasion during the entire program did B exhibit SIB during the lunch/task period (December 6). It rose to 55 percent the first day of the

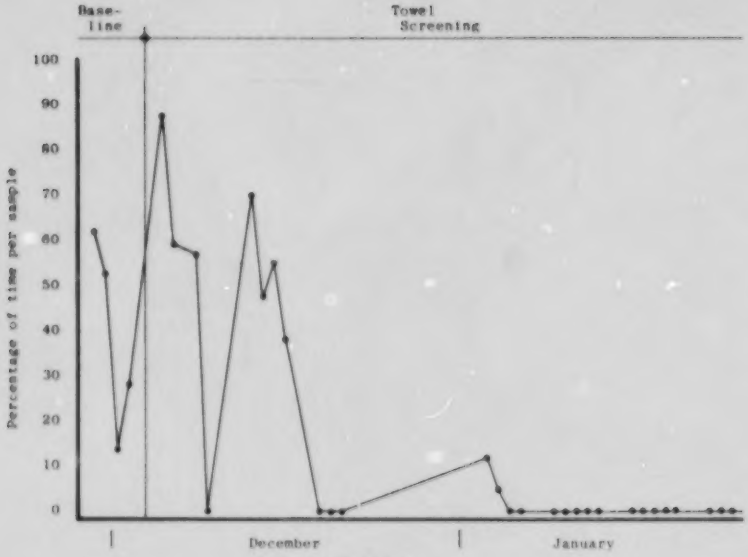

FIGURE 2

Occurrence of SIB as measured in daily 20-minute time samples.
(November 28, 1977-January 24, 1978).

second week, and decreased to 38 percent by Friday. The following Monday, as indicated earlier, the behavior disappeared altogether, and the child remained in the classroom the entire time.

Although the intervention had to be reinstituted for two days after Christmas vacation and once again for three days after spring break, the behavior remained at 0 percent for the next eight months. The child gained weight, his face healed, and he exhibited a happy cooperative demeanor.

DISCUSSION

The results obtained in this treatment program indicated that DRO and overcorrection had little effect in reducing the frequency of the student's head slapping. The combination of isolation, both visual and social, and reinforcement had a rapid effect in significantly reducing and eventually eliminating the SIB. The effect, moreover, has lasted for over eight months. Failure to reduce SIB through either DRO or overcorrection highlights the need to consider individual differences among persons exhibiting SIB. DRO and overcorrection have been shown to be effective in previous studies. Basic principles of the two approaches can be generalized, but the components of the DRO and overcorrection procedure must be highly specific to the individual involved. Awareness and sensitivity of the reinforcing events in a person's environment ultimately can provide the insight necessary for the development of a successful intervention program in the reduction of self-injurious behavior.

REFERENCES

Azrin, N. H., Kaplan, S. J., and Foxx, R. M. Austim-reversal: Eliminating sterotyped self-stimulation in retarded individuals. *American Journal of Mental Deficiency*, 1973, *78*, pp. 241-248.

Baumeister, A. A., and Rollings, J. P., The use of overcorrection procedures to eliminate the stereotyped behaviors of retarded individuals: An Analysis of collateral behaviors and generalization of suppression effects. *Behavior Modification*, (in press).

DeCanzaro, D. A., Baldwin, G., Effective treatment of self-injurious behavior through a forced arm exercise, *American Journal of Mental Deficiency*, *82*, *5*, pp. 433-439, 1978.

Epstein, L. H., Doke, L. A., Sajwaj, T. E., Sorrell, S., and Rimmer, B. Generality and side effects of overcorrection. *Journal of Applied Behavior Analysis*, 1974, *7*, pp. 385-390.

Forehand, R., and Baumeister, A. A. Deceleration aberrant behavior among retarded individuals. In M. Herson, R. M. Eisler, and P. M. Miller (Eds.) *Progress in behavior modification*. New York, Academic Press, 1976, pp. 223-278.

Foxx, R. M., and Azrin, N. H. The elimination of self-stimulatory behavior by overcorrection. *Journal of Applied Behavior Analysis*, 1973, *6*, pp. 1-14.

Jones, F. H., Simmons, J. Q. and Frankel, F., An extinction procedure for eliminating self-destruction behavior in a 9-year old girl. *Journal of Autism and Childhood Schizophrenia*, 1974, *4*, pg. 3.

Lovaas, O. I., Frietag, G., Gold, V. J. and Kassorla, I. C. Experimental studies in childhood schizophrenia: Analysis of self-destructive behavior. *Journal of Experimental Child Psychology*, 1965, *2*, pp. 67-84.

Measel, C. J. and Alfieri, P. A. Treatment of self-injurious behavior by a combination of reinforcement for incompatible behavior and overcorrection. *Dimensions of Adaptive Behavior*, 1976, *81*, pp. 147-153.

Merbaum, M. The modification of self-destructive behavior by a mother-therapist using aversive stimulation. *Behavior Therapy*, 1973, *4*, pp. 442-447.

Schreibman, L., A reply to the comments on "Employing electric shock with autistic children: a review of the side effects," *Journal of Autism and Schizophrenia.*, *7*, *2*, pp. 203-204, January 1977.

Stinnett, J. L. and Hollender, M. H. Compulsive self-mutilation. *Journal of Nervous and Mental Disease*, 1970, *150*, pp. 371-375.

Tanner, B. A., and Zeiler, M. Punishment of self-injurious behavior using aromatic ammonia as the aversive stimulus. *Journal of Applied Behavior Analysis*, 1975, *8*, pp. 53-57.

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Achievement Gains of Children Hospitalized for Behavior Disorders

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ABSTRACT

School progress of children with behavior disorders becomes a complex issue when these children are hospitalized for psychiatric care. For behavior-disordered children attending a hospital school, there is some evidence that academic gains are highest after a few months of hospitalization, but that a point of diminishing returns occurs sometime after the sixth month of admission. In order to examine this issue more closely, the pre and post achievement scores of a group of 34 latency-aged children were examined over a two-year period. Length of hospitalization ranged from one month to over a year. Analysis of these scores suggested some differences by length-of-stay and by age and entering achievement levels of the children. Implications of these findings for psychiatric hospital admission policies and inpatient school programs were discussed.

INTRODUCTION

Academic progress of behavior-disordered children admitted to psychiatric hospitals has been a matter of relatively limited concern in special education since so few children are actually admitted to such hospitals for any appreciable time (Hewett, 1967; Forness and Langdon, 1967). The academic achievement of behavior disordered children in general, however, has been shown to be low (Bower, 1969; Feldhusen, Thurston and Benning, 1970; Glavin and Annesley, 1971); and it seems clear that this results from a complex interaction between the child's behavior in a given school situation and that child's opportunity for effective instruction (MacMillan and Morrison, 1978). What remains unclear is the result of treatment on a behavior disordered child's *academic* progress, as opposed to the effects of that treatment on his or her social adjustment. As recent school legislation begins to open new options, such as psychiatric hospitalization, for treatment of children with behavior problems (Forness, 1979), it seems important that the question of treatment effects of the school progress of behavior disordered children be examined.

The present study was designed to assess the gains in academic achievement of children hospitalized for behavior problems and to examine the impact of one variable in particular on such achievement gains, the length of treatment. Recent data on achievement of children in a residential treatment center (Project "Re-Ed") suggest that greater academic gains are asso-

ciated with longer treatment. Clinical impressions and unpublished research (Levine, 1976; Krupitsky, 1977; Guba, 1977) in a university psychiatric hospital, however, tend to suggest that there may be a point of diminishing returns in which, after a certain point, the rate of academic progress dips markedly as compared to achievement gains early in the course of treatment. To examine this question the pre and post achievement scores of a group of behavior disordered children with differing lengths of hospital admission were examined over a recent two-to-three-year period.

METHOD

Subjects for the study were selected from a sample of 40 children, aged 7 to 12 years, who were admitted to our inpatient ward for latency-aged children in the UCLA Neuropsychiatric Institute over a two- to three-year period, from January 1977 to September 1979. All children were hospitalized for serious behavior disorders; no children with early childhood autism were included in the sample. A complete description of the hospital treatment program and school approaches is provided in Forness (1977, 1978); but for purposes here, it should be mentioned that psychiatric treatment on the ward was individualized for each child and included a combination of short-term psychodynamic, family therapy and behavioristic treatment approaches. Each child was given from two to three therapy sessions each week by psychiatry residents in training, including a family therapy session along with a staff social worker. Nursing staff used behavioral approaches for management of social behavior on the ward, and each child attended some four to six sessions of occupational and recreational therapy each week. The hospital school program was based on individualized instruction in a group setting with behavioristic approaches for motivation and management of classroom behavior. Children attended three hours of school daily from 9 to 11 a.m. and 1 to 2 p.m. Some 12 to 16 children were enrolled in the classroom at any one time over the two-year period.

Achievement testing of each child was done during the first week of hospital admission and again during the last ten days before discharge. All tests were administered either by one of two credentialed classroom teachers with masters degrees or by the team leader who had a Ph.D. in special education. The achievement test used was the Peabody Individual Achievement Test (Dunn and Markwardt, 1978). Three subtests, Reading Recognition, Mathematics, and Spelling, were used in the analysis of data. Although 40 subjects had been admitted over the study period, complete sets of scores were unavailable on six subjects who were discharged before post testing could be completed. Comparison of the scores of these six subjects with the remaining subjects in the sample did not reveal any systematic bias in sex, age, length of stay, or pretest achievement levels.

Although IQ was not available on all subjects, examination of medical records revealed most subjects to be within the normal range of intelligence (approximately 80 to 125 IQ). Achievement gain scores for all subjects were computed by subtracting each child's achievement scores at admission from those obtained at discharge. As a measure of the level of underachievement at admission, each child's level of achievement at that point was also subtracted from his expected grade level based solely on chrono-

logical age, though this can only be taken as a gross measure of the child's academic level (*c.f.* McLeod, 1979). Since some negative scores occurred in both gain scores and underachievement scores, these were converted to standard scores prior to data analysis.

RESULTS

Of the 34 subjects with complete sets of scores, 24 were boys and 10 were girls. Mean age of the sample was 10.1 years, with a range of 7.2 to 12.2 years (SD = 1.4 years). *Table 1* presents mean achievement levels of subjects at time of hospital admission along with the mean years below grade level. Note that achievement levels of the sample for reading, mathematics, and spelling averaged around the fourth-grade level and that the children in this sample were anywhere from a semester to one year below grade level, on the average. There was substantial variability not only in achievement levels but in underachievement as well.

There was a slightly significant relationship between chronological age and underachievement but only in mathematics. Spearman rank-order correlations (*rho*) were computed between years below (or above) grade level in achievement and chronological age. These correlations were .01, −.307, and .12 respectively in reading, mathematics, and spelling. The *rho* for mathematics was significant at the .05 level, suggesting that older children were somewhat further below grade level in mathematics than younger children. There was no significant relationship, however, between underachievement and length of stay (*rho's* = −.06, −.13, and −.29 respectively in reading, math, and spelling).

Mean length of stay for the sample was 7.05 months with a range of 1.5 to 14.0 months (SD = 3.5 months). Gains in academic achievement during hospitalization were computed by subtracting PIAT scores at admission for each child from those obtained at discharge. These were then converted to average gains per month by dividing each child's gain (or loss) in achievement by the number of months of hospital stay. These gains are presented in *Table 1* as well. It is of interest that there did not seem to be any significant relationships between underachievement and gains in achievement during hospitalization (*rho's* = .03, −.23, and −.16 respectively for reading, math, and spelling).

For purposes of analysis, the sample was divided into two equal groups by length of stay. One group (N = 17) was designated as those staying for a "shorter" length of stay; mean length of stay for this group was 4 months (range 1 to 7 months). The second group (N =17) was designated as those staying for a "longer" length of stay; mean length of stay was 10.1 months (range 7.5 to 14 months). These groups were further divided into younger (N = 16, mean age = 8.6, range 7.2 to 9.7 years) and older subjects (N = 18, mean age = 11.3, range 10.4 to 12.2 years).

Table 2 presents the mean achievement gain and the mean achievement gain per month for these groups by length of stay. Analyses of variance were computed by sex, length of stay, and chronological age. There were no significant differences in *reading* between groups on either measure. In *math*,

TABLE 1

Mean Entering Achievement Levels, Years Below Grade Level, and Achievement Gains Per Month

Academic Subject	Entering achievement levels			Years below grade level*			Achievement gains per month		
	Mean	(range)	SD	Mean	(range)	SD	Mean	(range)	SD
Reading recognition	4.6	(k.4 to 12.9)	3.1	−.52	(−5.7 to 5.9)	2.6	.16	(−.44 to +2.4)	.44
Mathematics	3.9	(k.1 to 12.8)	2.9	−1.2	(−6.2 to 6.7)	2.7	.22	(−.23 to 1.32)	.29
Spelling	3.9	(k.7 to 12.4)	2.7	−1.1	(−5.9 to 3.3)	2.4	.10	(−.23 to +.55)	.14

*Computed by subtracting each child's entering achievement scores from his or her chronological age (minus 5) at hospital admission.

TABLE 2

Mean Achievement Gains and Mean Achievement Gains Per Month by Length of Hospital Stay for Younger (Mean = 8.6 Years) and Older (Mean = 11.3 Years) Children

	Shorter length of stay (Mean = 4 months)		Longer length of stay (Mean = 10.1 months)	
Academic subject	**Mean gain**	**Mean gain per month**	**Mean gain**	**Mean gain per month**
Reading recognition				
Younger	.89	.38	.97	.05
Older	.45	.08	1.11	.11
Mathematics				
Younger	.66	.22	2.12	.10
Older	1.50	.37	.96	.10
Spelling				
Younger	.24	.10	.65	.07
Older	.38	.07	1.34	.14

however, there was a significant interaction effect for mean achievement gain suggesting that younger children gain more in math the longer they stay ($F = 5.79$, $df = 1/25$, $p < .05$). This effect was not significant for mean gain per month. A significant main effect was found for *spelling* ($F = 6.49$, $df = 1/25$, $p < .05$) suggesting that all children gain more in this area with longer stays, but this difference disappeared when mean gains per month were analyzed. There were no other significant effects of interactions.

DISCUSSION

To the extent that these children can be considered representative of elementary age disturbed children hospitalized for psychiatric treatment, it is interesting to note that they are on the average only moderately below grade level in academic achievement. It is possible that this is a function of the test itself, since the PIAT is individually administered, demands relatively little of the child, and is therefore a test upon which such children may perform better than on other achievement tests (Wilson and Spangler, 1974). There is, however, considerable heterogeneity in this sample. Some children are more than five years below or above grade level.

With regard to academic progress during hospitalization, the findings suggest that children are gaining from one to slightly over two months, on the average, for every month of hospitalization. Again there is considerable variability, and losses in academic achievement are not uncommon. Of interest is the fact that longer hospitalization may tend to be more beneficial in terms
38 of academic achievement, at least in some cases. While this did not tend to

be the case for reading, it should be noted that these children's reading recognition scores were generally not as deficient as their scores in math and spelling. Although older children tended to be further behind in math at hospital admission, it was the younger children who profited more in math achievement from a longer hospital stay.

The implication that longer hospital admissions are more beneficial in terms of academic gains, however, cannot be totally supported since these gains are not apt to be significant when per-month gains are examined. The importance of monitoring the academic success of disturbed children, however, is well recognized (Hewett, 1980, Martin, 1979; Weinstein, 1969). The fact that children in the present study generally made better than average gains in achievement may be an important consideration in the decision whether or not to hospitalize emotionally disturbed school children.

REFERENCES

Bower, E. M. *Early identification of emotionally handicapped children in school.* Second edition. Springfield, Illinois: Charles C. Thomas, 1969.

Dunn, L. M. and Markwardt, E. C. *Peabody Individual Achievement Test Manual.* Circle Pines, Minnesota: American Guidance Services, 1970.

Feldhusen, J. F., Thurston, J. R., and Benning, J. J. Aggressive classroom behavior and school achievement. *Journal of Special Education,* 1970, *4,* pp. 431-439.

Forness, S. 1977. A transition model for placement of handicapped children in regular and special classes. *Contemporary Educational Psychology 2,* pp. 37-49.

Forness, S. 1978. Programs for behaviorally disordered children at NPI. In R. Rutherford and A. Prieto (Eds.) *Severe behavior disorders of children and youth.* Lafayette, PA: Council for Children with Behavioral Disorders Monograph, pp. 64-68.

Forness, S. 1979. Developing the individual educational plan: Process and perspectives. *Education and Treatment of Children, 2,* pp. 43-54.

Forness, S. and Langdon, F. 1974. School in a psychiatric hospital. *Journal of Child Psychiatry 13,* pp. 562-575.

Glavin, J. P. and Annesley, F. R. Reading and arithmetic correlates of conduct-problem and withdrawn children. *Journal of Special Education,* 1971, *5,* pp. 213-220.

Guba, J. A. An Evaluation of the Academic Gains of Patients in the Secondary School of the UCLA Neuropsychiatric School, Unpublished manuscript. UCLA Department of Psychiatry, 1977.

Hewett, F. Problems in establishing a school in a psychiatric hospital. *Mental Hygiene.* 1967. *51,* pp. 275-284.

Hewett, F. M. and Taylor, F. *Emotionally disturbed child in the classroom* (Second Edition) Boston: Allyn & Bacon, 1980.

Krupitsky, S. M. Neuropsychiatric Institute—UCLA Preacademic/Academic School Gains, Unpublished manuscript. UCLA Department of Psychiatry, 1977.

Levine, M. B. An Analysis of Average Gain Scores for Children Attending the NPI School, Unpublished manuscript, UCLA Department of Psychiatry, 1976.

McMillan, D. L. and Morrison, G. M. Educational Programming. In H. C. Quay and J. J. Weary (Eds.) *Psychopathological disorders of children.* (Second Edition) New York: Wiley & Sons, 1978.

Martin, F. M. Is it necessary to retest children in special education classes? *Journal of Learning Disabilities.* 1979, *12*, pp. 388-392.

McLeod, J. Educational underachievement: Toward a defensible psychometric definition. *Journal of Learning Disabilities.* 1979, *12*, pp. 322-330.

Wilson, J. D. and Spangler, P. F. The Peabody Individual Achievement Test as a clinical tool. *Journal of Learning Disabilities.* 1974. *7*, pp. 384-387.

Weinstein, L. Project Re-Ed schools for emotionally disturbed children: Effectiveness as view by referring agencies, parents, and teachers. *Exceptional Children*, 1969, *36*, pp. 703-711.

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Evaluating Social Behavior in the Psychiatric Setting

K. W. Howell

GENERAL PROBLEMS

The therapeutic impact of social behavior evaluation within the psychiatric hospital is ultimately dictated by the characteristics of both behavior evaluation and the hospital setting. Some critical aspects of the hospital setting are: (1) a medical orientation, (2) incarceration, (3) unregulated length of stay and, (4) multidisciplinary programming. Each of these factors interact with certain aspects of evaluation.

As a general statement, evaluation inside a hospital is no different than evaluation outside of a hospital. And actually the evaluation of social behavior is like the evaluation of anything else in that it requires a device by which the thing evaluated is defined and/or measured; a standard to which the thing can be compared and a system for noting the difference between the measurement and the standard (Deno and Mirkin, 1977). While each of these factors are associated with certain conventional problems, it is the standard of performance (or criteria) which is most unconventional in the psychiatric hospital.

In the case of academic behavior, a student may be compared to a pre-specified curriculum and to successful grade-level peers in order to identify significant discrepancies. However, there is no pre-specified curriculum of social behavior. In the absence of such a curriculum, evaluators are forced to compare the student to less stable standards (Howell and Kaplan, 1980). In the hospital setting, the standards often applied to social behavior are the hypothetical ones which extend from various theories about how and why people behave the way they do. In a hospital, these theories are, not unexpectedly, medical in orientation.

The medical orientation of the hospital lends itself to a search for the internal causitive factors of the behavioral abnormality. This emphasis is frequently at odds with the non-medical orientation of the education staff. As a result, the educational unit is often viewed as a non-therapeutic portion of the total program by those in other units. In addition, the educators often view the traditional psycho-medical evaluation as a useless theoretical exercise. The situation described above is aggravated by the remaining three factors: incarceration; unregulated length of stay; and multidisciplinary emphasis. The hospital's confining environment and transient patient population produce an atmosphere from which it is nearly impossible to draw meaningful behavioral data. The treatment staff must be directly dependent upon intake data because they cannot reliably interpret the behaviors which they see. This is because their own observations are of patients who have recently undergone massive situational changes—making their observed

behavior non-representational. While staff members recognize that data collected on the ward has little value, the intake data they receive seems equally useless because it reflects what to them is a non-functional medical bias.

From the confusion described above, there eventually evolves an informal evaluative standard comprised of staff tolerance and ecological frequency. This means that the staff members will begin to compare the client to: (1) their own expectations and, (2) to the behavior of other clients. This situation is unfortunate, because it actually decreases the ability to prepare the client for the outside world. The peril of informally evolved ward-specific standards is that they lead to programs which prepare the client for life *in* the institution, instead of *outside* of it.

In a way, the hospital client has failed to meet an outside criteria which accounts for why they are now inside. Logically their treatment objectives should follow from the outside standard which they have failed to meet. This is done by analyzing the situational and behavioral demands of the outside standard. The client is then moved in the direction of these demands and eventually learns to function outside where they could not previously function. However, this will not occur if evaluation is tied to the hospital.

SPECIFIC PROBLEMS

The evaluative problems reviewed above form the standard to which a client is compared. (Obviously, data collection and summary problems also exist but the issue of standards seems more important for this discussion: it is not uncommon to see well-sampled, nicely summarized, irrevelant data.) These problems fall roughly into three categories: (A) problems of inappropriate setting, (B) problems of inappropriate criteria and, (C) problems of inappropriate purpose.

Inappropriate setting has already been discussed in terms of generalization. However, it is important to remember that the limited nature of the hospital setting allows limited behavior. This means that some "outside" behaviors may never occur on the ward. If a behavioral evaluation calls for changes in behaviors which never occur on the ward then the evaluation will have no value to the staff or the client. A youth, for example, may have been placed through the courts for repeatedly stealing cars. According to previous arguments, the staff should address the behavior exhibited outside of the hospital. Unfortunately, there are no cars on the hospital ward. Therefore an evaluation which specifies "decreasing car stealing" would be appropriate in that it speaks to the outside, but it would be inappropriate in that it has no treatment implications.

When specifying objectives, the evaluator must carefully balance the goal of movement from the institution against the treatment resources of the institution. There is no reason to evaluate in areas which can't be treated. If there seem to be alot of these areas, the program itself may need to be evaluated. In the case of stealing cars; the obvious solution is to spedify related objectives which can be addressed on the ward. For example: "decrease expression of opinions favoring car theft," or "increase asking permission to use the property of others."

Inappropriate criteria evolves when the hospital staff develop criteria for acceptable behavior based on ward experiences. This usually occurs as a gradual alteration of the staff's own expectations. This means the staff members begin to tolerate behaviors which others will not tolerate (although occasionally they may not except behaviors which others find quite normal—sexual activity, for example).

Staff expectations are influenced because the peculiarities of the hospital setting can effect staff as well as clients. The constant occurrence of bizarre behaviors may de-sensitize the staff to occurrences which would have previously upset them. At the same time, they may become overly sensitive to the occurrence of otherwise innocent behaviors which tend to elicit intense outbursts of some kind. For example: if one client frequently responds violently to direct verbal contact, a staff member may punish another client for attempting to start a conversation.

The ultimate criteria error is mistaking the ward behavior for normal behavior. In such a case, the staff might work with a client until the client's behavior conforms to the behavior of those around them. This would be reasonable except of course for the fact that those surrounding the client are all inmates in a psychiatric hospital. What the staff should do is establish behavioral expectations by collecting data in the outside setting where the client will be expected to function upon release.

Inappropriate purpose is the final factor leading to inappropriate standards. In some sense confusion at this level accounts for all previously mentioned difficulties. The purpose of the program should be to get the client out of it. Sometimes, however, objectives are specified which only have the purpose of training the client to get along in the hospital ward. These objectives are selected to control the client within the program. When this occurs, the standard of comparison has become the hospital instead of the outside world. This situation results from confusion about program purpose.

Evaluators and staff must constantly remind themselves of the program's purpose in order to avoid confusing it with strictly programmatic functions. Therefore, the "rules of the ward" should be reviewed. Loss of control over the client is immensely threatening to staff. And client control may be the primary duty of some staff members. However, the nature of therapy dictates a gradual transfer of control from the agency to the client. Such transfer is inhibited when uniform rules are applied to all clients, or when staff are unable to separate therapeutic activities from control activities.

CONCLUSIONS

In summary, the principal factor complicating behavioral evaluation in the psychiatric hospital is the absence of appropriate standards for comparison. This conclusion leads logically to the suggestion that evaluators attempt to secure these standards prior to evaluating. To do otherwise is to risk the application of ward-specific, staff-specific, and theoretically derived expectations to clients. Deficiencies noted in this kind of comparison are not likely to be therapeutic.

Standards should be based on observations of acceptable role models in situations similar to the client's normal environment. Particular attention

should be paid to the systems of communication, problem-solving, and problem resolution applied by successful individuals in these settings. The client's behavior should then be compared to the standards developed during these observations. Such comparison should result in objectives which will lead the client towards success in their home environment and away from the hospital setting.

REFERENCES

Deno, S. L. and Mirkin, P. K. *Data Based Program Modification: A Manual.* Reston, Virginia: Council for Exceptional Children, 1977.

Howell, K. W. and Kaplan, J. S. *Diagnosis in the Basic Skills: A Handbook for Deciding What to Teach.* Columbus, Ohio, Charles E. Merrill Publishing Co., 1980.

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The Individualized Education Program Process: Perspectives of Parents of Severely Behaviorally Disordered Children

Eugene B. Edgar and Robert B. Rutherford, Jr.

INTRODUCTION

The individual education program (IEP) is the keystone of *Public Law 94-142*. The definition of "appropriate education" is dependent on the assumption that an individual child's IEP accurately represents the current status of the child and the most appropriate intervention procedures. The notion of parental involvement found throughout *PL 94-142* is *only* mandated by the IEP process. The majority of due process issues are contingent on the relevancy and appropriateness of the IEP. In brief, the IEP, and the process surrounding the IEP, plays a unique role in assuring free and appropriate education for all children.

Recently there has been some concern voiced about the future role of the IEP process in the implementation of *PL 94-142*. As oversight hearings are conducted to explore modifications of the law and the rules and regulations, there is the danger that the IEP process will be altered in a manner that will reduce the role parents have in determining the educational program their children receive.

Through various informal interactions with parents of severely behaviorally disordered children and youth, several concerns regarding parental involvement in the IEP process became apparent. The first concern involved the issue of parental understanding of the IEP process. Although *PL 94-142* clearly mandates local education agencies (LEA's) to engage in systematic parent education activities relative to their rights and responsibilities, the concern here was about the number of parents who were uninformed as to their rights. A second concern was the number of parents who report that "the schools" really do not want parental input and are simply going through the motions. Finally, it was suspected that the IEP's of severely behaviorally disordered students often do *not* address the issue of behavior problems. This last issue is most serious in that parents have often reported that their child's IEP only relates to academic issues and that parents have frequently been unsuccessful in getting the schools to address the issues of behavior management in the IEP. Given these concerns, the purpose of the study was to determine parents' of severely behaviorally disordered students perceptions of the IEP process.

TABLE 1
Results

	Washington (N = 24)	Arizona (N = 16)	Total (N = 40)
Ages	Range: 2-20 years	8-24 years	2-24 years
Years in Sp. Ed.	Range: 1-13	1-14	1-14
Districts	3	2	5
Question 1 Understand	1 3 5 9 6 / 4 15 (3.66)	4 1 0 3 8 / 5 11 (3.62)	5 4 5 12 14 / 9 26 (3.65)
	Comment: Evidence that majority of parents did *NOT* understand IEP process		
Question 2 Important	Individualization (7) Parent input (5) Goals (4)	Services for child (2) Goals (2)	
Question 3 Least Helpful		No consistent responses	
Question 4 Individual Help	Teacher (16)	Teacher (9)	Teacher (25)
Question 5 Individual Believable	Teacher (18)	Teacher (9)	Teacher (27)
Question 6 School Involved	5 3 5 7 4 / 8 11 (3.1)	2 3 2 2 4 / 5 6 (3.23)	7 6 7 9 8 / 13 17 (3.13)

TABLE 1 *(Continued)*

	Washington (N = 24)	Arizona (N = 16)	Total (N = 40)
Ages	Range: 2-20 years	8-24 years	2-24 years
Question 7 Advocates	9 0 1 4 9 9 13 (3.17) Comment: Many parents had never used advocates	2 3 2 2 4 5 6 (3.23)	11 3 3 6 13 14 19 (3.19)
Question 8 Adversary	Y N 11 13 Comment: Regional difference	Y N 4 11	Y N 15 26
Question 9 Jargon	Y N 9 15	Y N 7 9	Y N 16 24
Question 10 More Meaningful	More parent input (3) Comment: Very few ideas	Explain more to parents (2)	
Question 11 Understand	1 2 3 3 15 3 19 (4.15) Comment: Regional difference	1 1 5 2 5 2 7 (3.64)	2 3 9 6 20 5 26 (3.97)
Question 12 Mandated	Y N 24 0	Y N 16 0	Y N 40 0
Question 13 Changes	More parent involvement (5)		

METHOD

Subjects

Forty parents of school aged severely behaviorally disordered children were surveyed. Twenty-four were from the greater Seattle, Washington area (three school districts represented) and 16 were from the greater Phoenix, Arizona area (two schools represented). The age range was two to 24 years. The general demographic information on all subjects is found in *Table 1*.

Questionnaire

The questionnaire consisted of 13 items—four of these questions were rated on a five part scale, nine items were open-ended. The questionnaire was used in a structured interview and completed by the interviewers. The actual items of the questionnaire are found in *Table 2*.

Procedures

Four graduate students conducted interviews with the parents. Each of these students was thoroughly familiar with the questionnaires. The parents were informed about the general purpose of the survey. Twenty-five interviews were conducted in a face-to-face manner, while 15 interviews were conducted over the telephone. The parents were recruited by contacting parent groups in the two target areas.

DISCUSSION

There are several cautions which need to be stated concerning these data. First is the issue of the representativeness of the respondents (parents). In all cases the parents were volunteers for the project. All but six were solicited from active parent groups in the two locations. Therefore these responses should not be viewed as a representative sample. They do represent a group that are often more vocal and more involved than the general population of parents of behaviorally disordered children. The second point is that the majority of parents from Arizona represented a private school which contracts with public schools. Finally, the questionnaire did not generate as clear data as was desired. However, regardless of these issues, these data do represent the views of some 40 parents and, as such, cannot be disregarded.

As stated earlier, three basic questions were addressed: (1) How well do parents understand the IEP?; (2) How "welcome" do the parents feel in their involvement in the IEP process?; and (3) Do the IEPs deal with issues that the parents feel are important (specifically behavior management)?

As to the first questions, parental understanding of the IEP process, there was conflicting evidence. Even though a majority of the parents responded that they understood the IEP process (26 of 40 responded affirmatively, *Question 1, Table 1*), later questions revealed that the parents really did not understand the process. For example, the most typical response to *Question 2*—What parts of the IEP process do you view as most important?—was,

TABLE 2

Parent Attitudes Toward the IEP Process

1. How well do you understand the IEP process?	Not at all 1 2 3 4 5 Very Well
2. What parts of the IEP process do you view as most important?	
3. What parts of the IEP process do you find least helpful?	
4. Who do you find most helpful in helping you in the IEP process? (School personnel)	
5. Who in the school, do you find the most believable (creditable) in the IEP process?	
6. How much do you think school personnel really want to involve the parents in the IEP process?	Not at all 1 2 3 4 5 Very Well
7. Do you find advocates, from outside the school, useful in helping you with the IEP process?	Not at all 1 2 3 4 5 Very Well
8. Have you found that you have been considered an adversary because you challenged the IEP process?	Yes No
9. Do you find the school personnel use too much educational jargon?	Yes No
10. How can school personnel make the IEP process more meaningful to you?	
11. How satisfied are you with the IEP process?	Not at all 1 2 3 4 5 Very Well
12. Do you believe the IEP should remain mandated by the law (94-142)?	Yes No
13. What changes in the IEP process would you like to see?	

Age of Child _____

Years in Special Education _____

Place of Residence _____

"What exactly is the IEP?" In fact, less than 10 of the parents indicated an understanding of the IEP process as compared to the IEP document.

The issue of "feeling wanted" was addressed through *Questions 4, 5, 6,* and *8.* The answers to these questions indicated that, while the parents did not feel welcomed with "open arms," there was no evidence of overt efforts by the schools to discourage parental involvement. Challenging the school

(*Question 8*) did appear to cause the parents to feel less welcome by the school, especially in the Seattle area. Of special note is the frequency in which the teacher was nominated as most helpful (25 of 40, *Question 4, Table 1*) and most believable (27 of 40, *Question 5, Table 1*).

Parental satisfaction with the IEP process and issues which the parents felt the schools were ignoring were both addressed. As to the overall satisfaction with the IEP process, the majority were satisfied (only five of 40 indicated dissatisfaction, *Question 11, Table 1*). The issue of behavior management programs was not addressed specifically but rather parents were allowed to address this issue through a series of open-ended questions (*Questions 2, 3, 10* and *13*). There were no consistent responses to these questions and the issue of behavior management was never mentioned.

Another issue addressed by the questionnaire was the use of outside advocates to assit parents in the IEP process (*Question 7*). The suspicion was that there would be a consistent view of the usefulness of advocates. Of those who understood the concept there was an almost even split in the perceptions of the parents (14 found them *not* helpful, 19 found them helpful, *Question 7, Table 1*). The majority of parents who had used an advocate found them helpful. Most who felt they were not helpful had only "heard about" advocates.

The last issue was if the IEP process should be mandated by law. This question (*Question 12, Table 1*) was answered by all 40 parents in the affirmative.

SUMMARY

Even though the sample probably represents the more vocal and active group of all parents of behaviorally disordered children, *three* generalizations to the entire population of parents can be made. First, parents need to receive specific training in the IEP process. Second, classroom teachers need to be made more aware of the critical role they play in the parents' perceptions of the school. Finally, there is little doubt that parents want the IEP process mandated by law.

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The Relationship of Five Affective Variables With Regard to Inner-City Juvenile Delinquents, Inner-City Non-Delinquents, and a National Norm Group: Implications for School Curriculum and Placement

Paul Zionts

INTRODUCTION

Many theories and much research have espoused the close relationship between juvenile delinquency and the school. Juvenile delinquents, upon return from incarceration or adjudication, are often systematically placed in educational programs for the emotionally disturbed/socially maladjusted. In fact, "placement in a juvenile detention facility" is one criterion for being labeled emotionally impaired in the state of Michigan (Public Act 198). Despite *PL 94-142*'s dictums of a free appropriate education and least restrictive environment, when a juvenile delinquent exhibits disturbing behaviors within the school, he/she is often referred to the juvenile justice system, rather than benefiting from in-school treatment (McDowell and Brown, 1978). Society's justification of this has been that juvenile delinquents perceive themselves and their world differently than others (Atkins, 1974; Frease, 1972). Empirical evidence regarding this tenant has been equivocal.

The research literature indicates that affective factors related to school are excellent predictors and descriptors of delinquency. Self-concept, aspirations, attitudes toward school, and getting along with others are considered as most important when trying to ferret out the etiology of juvenile delinquency (Elliot and Voss, 1974; Polk and Schafer, 1972). Educators and sociologists have traditionally attempted to define deviance and delinquency as the individual's failure to be assimilated into the mainstream of society. While the blame of the delinquent's acts may be attributable to the ills of the individuals or the society, it is the delinquent who must be rehabilitated or isolated.

Existing evidence of the differences between juvenile delinquents and non-delinquency has yielded contradictory results (Cohen, 1955; Hirschi, 1969; Miller, 1959). Delinquents are clearly unique from the non-delinquent if only by the label itself. The question has been asked by educators whether inner-

city delinquents differ in their beliefs and values from non-delinquent inner-city peers as well as from a national norm comparison group when compared using five variables purported to be important in ascertaining the stability and instability of high school students.

The variables addressed in this study are: (1) attitudes towards school—academics, curricula, and/or nature of school; (2) post-school aspirations—goals and the perceived means to attain them; (3) self-concept—feeling about one's self; (4) relationships with others—family, peers, teachers, and authority; and (5) general concerns—specific social and moral issues.

SUBJECTS

Subjects for this study included a delinquent, a non-delinquent, and a national norm comparison group. The delinquent group was composed of 30 delinquent ninth grade students who were enrolled in an inner-city summer program. All students were wards of the state of Connecticut and had a police record. The 30 non-delinquent ninth-grade students resided in the same community as the above sample of the delinquent students and were selected randomly from the district high school. These non-delinquents had no police record nor were they enrolled in special education classes. The ninth graders in the national norm comparison group (NNCG) presented a stratified random sample from twelve states throughout the United States.

PROCEDURES

All students were requested to complete the *STS Youth Inventory* (Remmers and Shimberg, 1967). The *STS Youth Inventory* is a checklist of 167 concerns (conflicts, problems, etc.) that may or may not affect high school teenagers. The inventory measures five categories: (1) My School (Attitudes Toward School); (2) After High School (Post-School Aspirations); (3) About Myself (Self-Concept); (4) Getting Along With Others (Relationships With Others); and (5) Things In General (General Concerns). The inventory was administered in small group settings of seven or eight students each. Direction and instruction were given orally which accompanied a written text. The students were asked to respond to short statements regarding the above categories by checking one of three different sized boxes or a circle which indicated great, moderate, small, or no concern.

RESULTS

A 3 × 5 (group by category) analysis of variance design was utilized to ascertain if there were any differences across the three groups on each of the five general areas. These analyses yielded no significant differences.

Further inter-group investigations among the categories revealed no significant differences between the inner-city delinquent and the inner-city non-delinquent groups. Between the inner-city non-delinquent and the NNCG one category, "Post School Aspirations", yielded a significant difference ($< .05$). Finally, in a comparison of the inner-city delinquent and the NNCG

significant differences were found in both the "Attitudes Toward School" and "Post School Aspirations" categories.

In addition to the analysis of variance, a discrete variable procedure was employed to ascertain the greatest concern of the groups. This was accomplished by combining the "great" and "moderate" responses and relabeling items as "greatest." The *chi-square* statistic was utilized to determine significant differences elicited on items of the greatest concern. The following results were reported: (1) in one item a significant difference existed between the inner-city delinquent and the inner-city non-delinquent groups; (2) in 11 items a significant difference existed between the inner-city non-delinquent and the NNCG; and (3) in 24 items significant differences existed between the inner-city delinquent and the NNCG.

DISCUSSION

The literature on the relationships of delinquents and non-delinquents has attempted to identify affective factors in which the groups differ. Traditionally, juvenile delinquents have been treated prejudicially. Juvenile delinquents have been discriminated against in high school programming in part because of the notion that their affective values and beliefs are more negative than those of their peers, and more globally, than those of the American Society (McDowell and Brown, 1978).

The data derived in the present study revealed that there were no significant differences among inner-city delinquents, inner-city non-delinquents and a NNCG. The results call for a further and more critical look at the literature.

The following presents a detailed comparison of the differences and similarities among the three groups. It is also an examination of the greatest concerns of each group.

Attitudes toward school

It is from the category *Attitudes Toward School* (represented by "My School" on the *STS Youth Inventory*) that yielded the most similarities as the primary conflict area across the three groups. The six common items among the groups will be placed under the following two sub-categories: (1) Academic Progress and (2) Meaningful Vocational Curriculum.

The following four items reflect those of greatest conflict under the subcategory "academic progress":

(2) I wish I knew how to study better.
(16) I wish I could get extra help in my weakest subject.
(32) Am I doing as well as I should in my school work?
(35) I worry about getting good grades.

The first two items on the above list indicate a need that is being neglected in most secondary school curricula. It is of note that the area of study skills often may be found on elementary school report cards and yet, the students in this study felt they had not successfully attained the skills by the ninth grade. The implication for curricula change is evident. The common cry of teachers is that homework is rarely completed by their students. The con-

cern implicit in *item 2* may be responsible, in part, for the teacher perceptions. Directly related to study skills is the wish to get additional help in the subject which is causing the student the greatest difficulty (*item 16*). All three populations are asking for help, either to do the work independently (*item 2*) or with the direct help of a teacher (*item 16*).

A significant difference was yielded in *item 16*. A comparison of percentages for each group was: (1) non-delinquent, 83 percent; (2) delinquent, 80 percent; (3) norm group, 63 percent. Both inner-city groups were considerably more concerned about receiving remedial help than the NNCG. These differences may be attributable to a greater awareness of the inner-city student's perceptions of his/her possible academic deficiencies to cope with his/her school program with over 80 percent of both inner-city groups responding with strong concerns about receiving extra help, the message is clear that they care, they are concerned and they want to achieve. Perhaps tutorial hours in place of study halls can be a viable answer.

Items 32 and *35* reveal a common insecurity about the student's progress in school. Success, measured by good grades (*item 35*) yielded a significant difference between the delinquent (80 percent) and NNCG (69 percent). All three groups responded with great concern to the issue of doing as well as they could in school. This affirms the work of Pappanikou and Kochanek (1974) in their comparison of inner-city students and the same NNCG. The data on the delinquents is contrary to what is commonly assumed (Comptroller General, 1977, Hirschi, 1969): that delinquents do not care about academic achievement.

Another major area of conflict dealt with pertinent content area studies offered by the school and marketable vocational skills. The following two items reflect the common concerns among the groups:

(14) I would like to get some work experience while I'm still in school.
(37) I want to take courses that will get me ready for a job.

The students, as consumers, seem to be giving educators a message. Preparation for meaningful work after high school is a need that is often heard but as Polk and Schafer (1972) found, little is being done to remedy the situation. Students are expressing discouragement at the school's inability to meet their needs, which are based upon society's expectation of "success".

Post-school aspirations

In comparison to the other four categories on the STS, "Post School Aspirations" (After High School) elicited the greatest levels of concern from all students. While all three groups perceived this as a major problem, the mean scores for both the delinquent (64.9) and the non-delinquent (65.0) groups were greater (significant ($p < .05$) than for the NNCG (55.22).

There were six common items among the groups which may be included under the following two sub-categories: (1) College and (2) Jobs.

The following two items reflect those of greatest concern under the subcategory "college":

(45) What is college really like?
(52) Do I have ability to do college work?

The apparent interest in college stands out as a high priority concern for all three groups, perhaps reflecting society's "hype" of higher education. That 80 percent of the delinquents are concerned about the nature of college should be noted. In fact, this issue was significantly different between the delinquent and the norm group with the delinquent group appearing to be more interested in information relating to college. Admittedly, the probability of a juvenile delinquent becoming matriculated into college is small. Yet, these delinquent ninth graders are demonstrating as much concern and interest to the same questions as was demonstrated by their non-delinquent and norm group peers.

The four items which reflect those of greatest conflict under the sub-category "job" are as follows"

(59) What kind of training is needed for different jobs?
(64) What fields will offer good opportunities when I finish high school?
(65) What kinds of jobs are open to high school graduates?
(73) Will I succeed in the work I do when I finish high school?

Again, one is struck with concern for being competitive in the job market by all three groups. On *items 59, 64,* and *65,* the delinquents are significantly more concerned about the statements than the other groups. One might perceive this finding as a signal of the delinquent's awareness of his/her social/economic standing and his possible inability to escape unemployment or underemployment.

The fact that the delinquent perceived his/her post high-school period as significantly more critical than the other groups reinforces the above stated author interpretations. These results suggest that ninth grade delinquents still possess traditional concerns regarding aspirations despite their contact with the courts. In fact, the delinquents appear to have stronger concerns about life after high school than do their inner-city non-delinquent peers. One may hypothesize that this may be the direct result of adjudication which may allow the youth to reflect upon alternatives, for police record is the only distinguishing characteristic between the two groups.

Self-concept

The following two items reflect those of greatest conflict under the category Self-Concept (About Myself) on *STS Youth Inventory*).

(91) I am trying to rid myself of an undesirable habit.
(92) I worry about tests in school.

Item 92 was the sole statement included by the three groups that regarded self and school. The following four items yielded strong conflicts that also may be interpreted as problems which could impede school success:

(87) I feel that I'm not as smart as other people.
(90) I am afraid of failure or humiliation.
(95) I am afraid to speak up in class.
(96) I am afraid of making mistakes.

Consistent with the findings, thus far, all three groups responded similarly to the above school anxieties. It could be suggested that if learning is to oc-

cur, then conditions giving rise to the above problems should be alleviated in the classroom.

Attention should be paid to the one item of significant difference under this heading. *Item 84*, "I need a part-time job", was a significantly greater concern in this area for both the delinquents (80 percent) and the non-delinquents (90 percent) than for the norm group (49 percent). This may suggest the economic hardships that affect those who reside in the inner-city. Saterlie (1965) contended that financial instability related directly to school success or failure.

Also noteworthy was the statement regarding improvement of figure or physique being among the greatest concerns of the norm group (58 percent) and the least concerns of the non-delinquents (27 percent). This may suggest that the inner-city groups have a better self concept with regards to their physique/figure. This may lend support to the notion of strong athletic involvement which is commonly associated with inner-city youth. It may also be that in their hierarchy of priorities, physical attributes may be of a lower rank. What appears to be a good physique/figure may in fact be the result of poor nutrition, creating the "attractive" thin person.

Relationships with others

The items listed as high priority problems under this category Relationships With Others (Getting Along With Others on the *STS Youth Inventory*) may all be considered statements of intense personal involvement. The following reflects the two items of conflict that were common across all three groups.

(107) I want to make new friends.
(108) I need to develop more confidence.

Other items which were of concern to the students involved wanting to be liked (104); being able to converse easily (105); and the ability to develop tack and interpersonal skills (109, 110, 117, 122). Agreement among the subjects in showing concern for above is understandable and supported by a psychological needs theory relating to affiliation, belonging, and "being needed" or loved.

The only significant difference between the non-delinquent and the NNCG was on *item 114*, "I want to feel important to society or to my group". The NNCG was considerably more concerned than the non-delinquents on this issue. The non-delinquents may feel confident about their contributions to their immediate group, generating little concern about the item. The inner-city population's negative view of government (*i.e.*, poor voting participation, etc.) may also engender little motivation to "feel important to society".

It should be noted that *item 145*—"It bothers me that some kids are left out of things"—was one of the greatest concerns for both delinquents and non-delinquents. This suggests that the inner-city youth had a feeling of empathy for their peers which was not expressed by the NNCG. An investigation of the composition (*i.e.*, handicapped?) of these "left-out-kids" may reveal some interesting and useful information. Could it be that negative circumstances yield a greater sensitization for the plight of others? All of the above

items are relatively indicative of feelings commonly perceived not only be teenagers, but by adults as well. The desire for friendships by all groups does not necessarily support the theories of Cohen (1955) and Miller (1959). These authors might suggest that the lower class members are more apt to be members of social groups (gangs) than middle class members, who have the inherent opportunities to succeed in the mainstream of society.

General concerns

The groups' responses to the category General Concerns (Things in General in the *STS Youth Inventory*) yielded the lowest means of the five categories investigated. The following items reflected those of greatest interest among the three groups:

(156) I'm disturbed about poverty and hunger in the world.
(160) How can I make the world a better place in which to live?
(162) Is there any way of eliminating slums?

The above three items can be construed as problems that are inherent in the lower class and/or inner-city inhabitants.

An investigation of the items under this heading revealed such socially accepted issues as values, race prejudice, good government, and the proper handling of finances.

The following five items yielded significant differences across two groups:

(147) I'm searching for something to believe in (delinquent and NNCG).
(155) What makes people selfish or unkind (delinquent and non-delinquent)?
(160) How can I make the world a better place in which to live (delinquent and NNCG)?
(162) Is there any way of eliminating slums (delinquent and NNCG)?
(163) What can I do to help get better government (delinquent and NNCG)?

It should be noted that in all of the above issues the delinquent responded with greater concern than the other groups. This is in accord with the results alluded to earlier relative to sensitization to the plight of others. The implications may suggest that because of the experience that delinquents encountered, they are more responsive to the concerns of their world.

It is evident that all three groups are marked by their similarities rather than differences with regards to their general concerns. The questions in this category, while broad, indicate that each group responded in a conventional manner to the values and beliefs stated.

EDUCATIONAL IMPLICATIONS

There has been much written and mandated about the moral and legal regulations regarding "least restrictive environment" and "free appropriate education". Juvenile delinquents comprise a major group of youth who have been discriminated against in high school programming decisions. The re-

sults of this investigation indicate that if such discrimination is based upon the students' affective attitudes and concerns, then these actions of discrimination are indeed unjust.

Many juvenile delinquents have been treated more negatively in schools than other students because of their out-of-school behaviors. Running away from home, stealing a car, or even breaking into a store has routinely resulted in the adjudication and subsequent placement into classrooms for the emotionally disturbed or socially maladjusted. The obvious negative connotations of the label "juvenile delinquent" stays with the youngster both in the community, and somewhat unfairly, in the school.

The educational implications are clear. Placement in special education classes should never be routine. Previous educational experiences, in many cases not negative with regard to behaviors, should be evaluated. Obviously, an educational assessment with regard to the student's academic proficiency as well as school socialization should be taken into consideration. Applying the delinquent label to the student outside of the school should not necessarily be considered as a factor in school placement decisions.

This discussion should not be applicable to those students committing antisocial behaviors within the educational framework. It is for this population that the special education facilities are intended.

The delinquent's apparent similarities with the inner-city non-delinquents and the norm comparison group, demonstrate that the ninth grade delinquent population is still very concerned about education at the onset of high school. And yet, it is this group that is frequently given a less than equal educational opportunity by society and consequently, the least chance for success. It would seem that this constituency is giving educators a message to which little attention is paid.

REFERENCES

Atkins, J. W. Delinquency as a Function of Self-Esteem. *Dissertation Abstracts International*, 1974, p. 110.

Cohen, A. K. *Delinquent Boys*. New York: Free Press, 1955.

Comptroller General. Learning Disabilities: The link to delinquency should be determined, but schools should do more now. Report to Congress, Washirigton, D.C.: Department of Health, Education and Welfare.

Elliott, D. S., and Voss, H. L. *Delinquency and Dropout*. Lexington, Massachusetts: Lexington Books, 1974.

Frease, D. E. The Schools, Self Concept and Juvenile Delinquency. *British Journal of Criminology, 12*, pg. 111, 1972.

Hirschi, T. *Causes of Delinquency*. Berkeley, California: University of California Press, 1969.

McDowell, R. L., and Brown, G. B. The emotionally disturbed adolescent: Development of program alternatives. *Focus on Exceptional Children*, 1978, *10*, (1).

Miller, W. B. Lower class culture as a generating mileu of gang delinquency. *Journal of Social Issues*, 1958, *14*, pp. 5-19.

Pappanikou, A. J., and Kochanek, T. T. Aspiration v. achievement: an analysis of and subsequent implications for the onset of emotional disturbance in urban areas. In B. T. Saunders (Ed.), *Approaches with emotionally disturbed children*. Hicksville, New York: Exposition Press, 1974, pp. 440–457.

Polk, K., and Schafer, W. E. *Schools and Delinquency*. Englewood Cliffs, New Jersey: Prentice Hall, 1972.

Remmers, H. H., and Shimberg, G. *STS Youth Inventory, General Manual, Form G*. Bensenville, Illinois: Scholastic Testing Service, 1971.

Saterlie, M. E. Realistic studies for potential dropouts. In E. P. Torrance and R. D. Strom (Eds.), *Mental Health and Achievement*. New York: Wiley & Sons, 1965, pp. 286–304.

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The Complex Relationships Among Selected Family, Educational, and Cultural Variables and Sex to Specific Indicators of Juvenile Delinquency

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ABSTRACT[1]

Multivariate analyses were used to examine complex relationships among selected family, educational, and cultural variables and sex to specific indicators of juvenile delinquency. These indicators were: (1) age of the individual at the time the first offense was committed; (2) number of total acts committed; (3) type of offense committed; and (4) percent of the total number of acts committed that were of a particular type of offense.

Results showed that the independent variables, sex, ethnicity, and grade of first offense and the dependent variables, total number of acts committed, number of offenses committed against persons, and the percentage of total offenses committed that were chins (status) offenses yielded more significant relationships than all of the rest combined.

INTRODUCTION

Historically, juvenile delinquency has been looked at in relation to specific areas such as sex of the offender (Tobias, 1970; Toby, 1957), cultural/ethnic background (Cohen, 1955; Nye, Short, and Olsen, 1958; Shaw and McKay, 1942), family organization/disorganization (Hirschi, 1969; McCord and McCord, 1958; Monahan, 1957) and education (Polk, 1975; Polk and Halferty, 1966; Cartwright, Tomson, and Schwartz, 1975). This procedure of examining the relationships between isolated variables and delinquency results in an unrealistic viewpoint of the complex relationships that actually exists. Despite research showing high correlations between specific variables and delinquency, several researchers have indicated a need to move away from these simplistic methods of looking at and explaining delinquency (Wilkinson, 1974; Hook, 1970; Stullken, 1956). These authors indicated that delinquency is a result of many interrelated variables. This argument was supported by Rosenquist and Megargee (1969) who stated it was not enough to identify various factors which were reliably but individually associated with delinquency. These single factors need to be examined in

conjunction with other variables to determine how they interact. They also expressed the belief that the majority of this research has very little usefulness because the separate disciplines have investigated delinquency with regard to variables common only to their area.

In contrast to looking at delinquency with regard to separate variables, there has been a progressive trend toward looking at multiple variables and their interrelationships to delinquency. For example, Walberg (1972) looked at family characteristics, gang membership, self-concept and perceptions of authority and school attitudes in relationship to delinquency. Results showed that particular combinations of variables were more positively associated with delinquency than others. Stullken (1956) investigated the interrelationships between delinquency and family interaction patterns, school adjustment and environmental backgrounds. The importance of different family and social variables in relation to delinquency is further supported by Gardiner (1976) who also demonstrated how "chance" many times is an important factor in relation to a juvenile committing a serious offense. These findings lend support to Stullken's (1956) idea that juvenile delinquency is not a pathological condition, such as a disease, but a compilation of symptoms which are brought about by societal conditions.

The procedure for grouping all juvenile offenses under the term "delinquency" also has been an area of much concern. Hooke (1970) indicated the inappropriateness of trying to encompass all types of juveniles and offenses under one general theory. This author states:

> it appears to make more sense to examine the differences between a slum-dwelling, limited intellect, school dropout convicted of assault with intent to commit robbery, and an upper-middle-class adolescent convicted for joy-riding, shoplifting or drug use, than it does to lump them together and attempt to find a single theory to explain both of their behaviors (Hooke, 1970, p. 155).

Alternative methods of classifying delinquents have been suggested. Hooke (1970) proposed classifying delinquency according to the nature of the act and/or the severity of act. Studies utilizing these methods of classifying delinquent acts have verified their importance (Walberg, 1972; Empey and Erickson, 1966; Davis, 1976).

PURPOSE OF THE STUDY

The purpose of the present study is to investigate the complex relationships among selected family, educational, and cultural variables and sex to specific indicators of juvenile delinquency. These indicators include: age of the individual at the time the first offense was committed; number of total acts committed; type of offense committed; and percentage of the total number of acts committed that were of a particular type of offense.

RESEARCH QUESTIONS

Research Question 1: Is the age of the individual at the time the first offense was committed related to selected family, educational, cultural variables and sex?

Research Question 2: Is the total number of acts committed related to selected family, educational, cultural variables and sex?

Research Question 3: Is the number of each type of offense committed related to selected family, educational, cultural variables and sex?

Research Question 4: Is the percentage of each type of offense committed related to selected family, educational, cultural variables and sex?

The dependent variables include:

1. Number of acts (NOACTS)—total number of all offenses committed.

2. Age of first offense (AGE1)—age of juvenile at the time of their first offense.

3. Property offenses (PRPOF)—total number of property offenses committed.

4. Person offenses (PEROF)—total number of offenses committed against persons.

5. Drug offenses (DRGOF)—total number of drug offenses committed.

6. Chins offenses (CHINS)—"Children in Need of Supervision"—total number of chins offenses committed. These are also referred to as status offenses.

7. Other offenses (OTHOF)—total number of other types of offenses committed.

8. Percentage of property offenses (NOPRP)—percentage of total offenses committed which were property offenses.

9. Percentage of person offenses (NOPER)—percentage of total offenses committed which were offenses against persons.

10. Percentage of drug offenses (NODRG)—percentage of total offenses committed which were drug offenses.

11. Percentage of chins offenses (NOCHI)—percentage of total offenses which were chins offenses.

12. Percentage of other offenses (NOOTH)—percentage of total offenses which were other offenses.

The following independent variables were examined in relationship to the preceding dependent variables:

1. Sex of the offender—male, female.

2. Ethnicity—Caucasian, Spanish.

3. Grade the offender was in at the time the first offense was committed (Grade 1)—Kindergarten through high school.

4. Family composition:

   a. Parents—natural mother, natural father; only stepfather; only natural father, or other father[2].

   b. Reasons (for parent(s) other than natural mother and natural father) —divorce, separation, or death.

c. Number of siblings (at time of first offense)—0-6.

d. Birth order for offender—oldest, youngest, only child.

METHODOLOGY

Subjects

Six-hundred male and female juveniles who had come into contact with the law and the juvenile probation department served as the sample for the present investigation. This sample consisted of juveniles who had officially been labeled delinquent as well as those who had not. Stratified samples, involving sex and ethnicity, were randomly drawn from the estimated 10,000 active files located in the Juvenile Probation Department, Bernalillo County Courthouse, Albuquerque, New Mexico. The initial sample was comprised of 150 Caucasian males, 150 Spanish males, 150 Caucasian females, and 150 Spanish females. The subjects ranged from six to 17 years of age. Out of this sample, 549 had complete data and were utilized in the analyses. The final sample consisted of 140 Caucasian males, 140 Spanish males, 139 Caucasian females, and 130 Spanish females.

Procedure

Each active folder was represented by a 5" × 8" index card. The sampling technique employed involved measuring the total length of the index cards within the five drawers as well as the length of the cards for each individual drawer whereby a selection process utilizing measurement was then used.

A starting place in a table of five-digit random numbers was chosen. Each successive five-digit number was then multiplied by the total length of the index cards to determine the distance to be measured for the selection of each individual card. The name and number on the card were matched to the name and number of the juvenile's file and the index card was replaced. If a subject was drawn twice, that card was replaced and the investigator continued to randomly select, via the measurement technique, until a card was selected which previously had not been selected. This replacement method was also followed in the process of filling the four stratified sample cells.

Statistical treatment of the data

The data were initially analyzed using Canonical Correlation—a method which analyzes linear combinations of multiple independent and dependent variables to determine the maximum correlation between the two sets of variables (Kerlinger and Pedhazur, 1973). Multiple regression was then used which analyzes not only the individual but also the collective contributions of two or more independent variables to the variation of a single dependent variable (Harris, 1975; Kerlinger and Pedhazur, 1973).

A "Corrected" comparison-wise alpha level was used to lessen the risk of committing a Type I error. This computed comparison-wise alpha was .0042. Since significance tables do not include this alpha, the next lower alpha, .0025 was used.

RESULTS

The results will be presented in relation to the research questions. All significant interactions that are discussed were significant at the $p < .0025$ significance level.[1]

Research question 1. Is the age of the individual at the time the first offense was committed related to selected family, educational, cultural variables and sex? The average age of the individual at the time the first offense was committed was 13.65 years old with no appreciable difference between ethnic or sex samples.

Research question 2. Is the total number of acts committed related to selected family, educational, cultural variables and sex? There were significant interactions between the total number of acts committed and some of the independent variables, including males committing more total offenses than females.

The higher the grade in school at the time the first offense was committed, the fewer total number of offenses committed by children living with their natural fathers. Children without both natural parents at home committed more total acts than children with both natural parents at home.

Regardless of father status, Spanish children committed more offenses than Caucasian children. Whereas Caucasian children committed basically the same average number of offenses regardless of father status, Spanish children with stepfathers committed more total offenses than did Spanish children with natural or other types of fathers.

Spanish children also consistently committed more total offenses than did Caucasian children when there was one or more siblings in the family. Caucasian children, though, exhibited more total offenses than did Spanish children when they were the only child.

Research question 3. Is the number of each type of offense committed related to selected family, educational, cultural variables and sex? Overall, there were eleven significant interactions between the independent variables and the type of offense committed.

There was a significant relationship between sex and number of person offenses, number of drug offenses, and number of other offenses committed. Males committing a higher number of these offenses than females. Also, regardless of the number of siblings in the family, males committed a larger number of person offenses. This was not constant with drug offenses and other offenses.

Ethnicity was shown to be significantly related to the number of offenses committed against persons and the number of chins offenses committed. Spanish children committed more offenses against persons than Caucasian children except when they were the only child, then Caucasian children committed more. Spanish children also committed more chins offenses than Caucasian children.

Children having both natural parents in the home was also significantly related to the number of chins offenses committed. Children with both natural parents in the home committed fewer chins offenses than children without both natural parents.

The grade the child was in when the first offense was committed was significantly related to the number of drug offenses committed and the number of property offenses committed. Those children who committed their first offense in a lower grade were more likely to commit a larger number of property offenses whereas children committing their first offense in a higher grade were more likely to commit more drug offenses.

Research question 4. Is the percentage of each type of offense committed related to selected family, educational, cultural variables and sex? Results showed that the percentage of each type of offense was significantly related to selected independent variables.

Sex was shown to be significant in relation to the percentage of chins offenses committed and the percentage of other offenses committed. Females committed a higher percentage of chins offenses but males committed a higher percentage of other offenses.

Ethnicity was also significant. Spanish children committed a larger percentage of chins offenses than did Caucasian children.

Grade of first offense was significantly related to th e types of offenses. Results showed that after the fifth grade, as the grade of first offense increased, the percent of property offenses tended to decrease. For chins offenses in general, the higher the grade in school at first offense, the higher the percentage of chins offenses committed. This relationship is more complicated with the percentage of drug offenses committed and the interaction between grade of first offense and ethnicity. Spanish children committed a higher percentage of drug offenses when they committed their first offense in the fourth, sixth, seventh, eighth, and tenth grades with Caucasian children not committing any drug offenses until the seventh grade. Caucasian children committing their first offense in the ninth, eleventh, and twelfth grades committed a substantially higher percentage of drug offenses than did Spanish children.

DISCUSSION

The present investigation studied the interactions between multiple independent variables, involving selected family, cultural, and person variables, and varying aspects of delinquency. Sex, ethnicity and grade of first offense were significantly related to the measures of delinquency more often than the other independent variables (see *Table 1*), but their relationships were not always in the same direction. For example, males committed more drug offenses, offenses against persons, and other offenses but females committed a higher percentage of chins offenses than males.

The dependent variables of total number of acts committed, number of offenses committed against persons, and the percentage of total offenses committed that were chins offenses yielded more significant relationships than all of the rest combined. These three dependent variables comprised 63 percent of all the significant relationships. These results support the necessity of examining different aspects of delinquency and their relationships to other variables as opposed to grouping all forms under the one heading "delinquency".

In examining the significant relationships between the number of acts

TABLE 1

Independent Variables Significantly Related to the Dependent Variables

	Number of Acts	Age of First Offense	# of Property Offenses	# of Person Offenses	# of Drug Offenses	# of Chins Offenses	# of Other Offenses	% of Property Offenses	% of Person Offenses	% of Drug Offenses	% of Chins Offenses	% of Other Offenses
Sex	X			X	X		X				X	X
Ethnicity	X			X		X					X	
Both Natural Parents	X					X						
Number of Siblings	X											
Grade of First Offense	X		X		X			X		X	X	
Father Status X Ethnicity	X											
Sex X Number of Siblings				X								
Number of Sibling X Ethnicity	X			X								
Grade of First Offense X Ethnicity										X		
Father Status X Grade of First Offense	X											

Note. "X" means a significant interaction

committed and the independent variables, it was found that children without both natural parents in the home committed more total acts than children with both natural parents at home. The results support previous research showing a higher incidence of offenses for juveniles coming from disrupted homes where both natural parents were not present (Chilton and Markle, 1972; Monahan, 1975; Willie, 1967). Also shown was children who had natural fathers present in the home were less likely to commit more total offenses as the grade they were in when the first offense was committed became higher. Natural fathers present in the home appears to be an important factor in suppressing the number of offenses committed, especially for children who became delinquent in higher grades. This finding goes beyond just stating that higher rates of delinquency are associated with and are more common to children coming from home environments not having both natural parents present.

Ethnicity was shown to be very important with Spanish children overall committing more total offenses than Caucasian children. A breakdown

though showed that Spanish children with stepfathers committed more offenses than Spanish or Caucasian children with any other type of father. These findings suggest that additional variables may be responsible for higher rates of delinquency in Spanish children than just family disruption. How the Spanish child views the presence of the stepfather and the resulting interaction style and emotional climate are possibly relevant intermediary variables. Circumstances surrounding the remarriage of the mothers would be an important aspect in the development of hostile feelings between certain children and their stepfathers.

Spanish children also consistently committed more total offenses than did Caucasian children when there were one or more siblings present in the home. On the average, this difference increased as the number of siblings in the home increased. One reason for this may involve the greater strain on the Spanish family budget with larger numbers of individuals in the household.

Overall, males committed more offenses than did females. As children grow up in our society, males are generally given more freedom to exhibit more aggressive, independent behaviors than females (Maccoby and Jacklin, 1974). This may lead to a higher number of behaviors exhibited which would be labeled delinquent as the male child grows older.

The number of each type of offense committed was shown to be significantly related to a variety of independent variables. When examining the total number of offenses committed against persons, total number of drug offenses, and total number of offenses classified as other, males committed significantly more offenses than did females. Those findings indicate an area where further research is vitally needed as there are varying types of offenses in each category.

Ethnicity was an important variable with respect to the number of offenses committed against persons and the number of chins offenses committed. Generally, Spanish children committed more of these offenses than did Caucasian children. Both of these could be attributed to possible home environments where the child is taught or forced into inappropriate methods of handling problem situations. This is supported by the results showing that as the number of siblings increased, Spanish children committed increasingly more offenses against persons than did Caucasian children.

For children coming from home environments where both natural parents were not present, the number of chins offenses were the greatest. This indicates that there are higher numbers of children running away, not obeying parents, etc., from disrupted homes than from other home environments. These behaviors might have been in reaction to the lack of parental control, or less tolerant attitudes of parents to certain behavior.

The number of property offenses and the number of drug offenses committed were significantly related to the grade the child was in when the first offense was committed. The relationships were not similar though. Where children committing the first offense in the lower grades were more likely to commit a larger number of property offenses, those children committing their first offense in the higher grades were more likely to commit more drug offenses. This could be due to the fact that children who experiment with

drugs in the lower grades may find less peer acceptance and positive reinforcement for this type of behavior; as they get older, they may find more acceptance and reinforcement. Also, the mobility aspect, being able to drive and to physically be with one's peers, creates a setting and an atmosphere more conducive to drug taking. The same parallel can be seen with the use of alcohol as children may have parents and peer groups who drink heavily and encourage such behavior (Braucht, Brakarsh, Follingstad, and Berry, 1973). The access of drugs is also easier as one becomes older. Just the opposite was shown with the number of property offenses committed. When a child is younger, the amount of money one has is substantially smaller than when he/she is older, therefore to gain material possessions a child may steal things to acquire them. The opportunities for employment are not as great with this younger age group as compared to when they are older, which in turn limits ways of gaining money or items legally. This was demonstrated by the fact that shoplifting was one of the major property offenses committed in the younger age group.

When the percentage of each type of offense was examined, the only measure of delinquency that was not significant was the percentage of total acts committed that were offenses against persons. The results showed that after fifth grade, the lower the grade in school when the child committed his/her first offense, the higher the percentage of property offenses committed. This again, as discussed previously, may mean that a specific type of crime which is more common at a certain age simply because of assessability or lack of financial means of acquiring particular items. As the grade the child is in at the time the first offense is committed gets higher, the percentage of chins offenses increases also. This could result from any number of plausible reasons. The nature of many chins offenses lend themselves to older children to a greater degree than younger children. Such things as curfew, liquor, runaway, and truancy violations are easier to control in younger children than in older. Truancy may become more prevalent in older children primarily because they have been through more years of nonreinforcing and threatening experiences in school which they escape from by not going (Elliott, 1970; Elliott and Voss, 1974).

Alcohol, like drugs, is more of an "in" thing to be involved with at certain ages than others. The results examining the percentage of drug offenses were extremely important. Spanish children committing their first offense in the lower grades committed higher percentages of drug offenses than did Caucasian children, but this was reversed for Spanish children committing their first offense at a higher grade. In these higher grades, Caucasian children exhibited much higher percentages of drug offenses than did Spanish children. The percentage stays relatively the same for Spanish children but drastically increases for Caucasian children. Spanish children may from early ages be exposed to the availability and the use of drugs whereas Caucasian children may not. Spanish children may be more adept at hiding and concealing the use of or possession of drugs. Parental concern also may be greater over Caucasian children involved with drugs as opposed to Spanish children. This could be reflected in the numbers of drug offenses reported from "concerned" parents.

Females committed larger percentages of chins offenses than males, although the sexes committed about the same number of these offenses. This

is consistent with the literature indicating that females engage in more non-violent, non-aggressive types of antisocial and delinquent behavior (Feshback, 1970). Spanish children were also more likely to commit higher percentages of chins offenses than Caucasian children. The majority of chins offenses are behaviors that are escape oriented in nature. On the other hand, males were shown to commit larger percentages of offenses labeled other. Acts such as tampering with a motor vehicle and driving while intoxicated are examples. Other than the reason that males may be more inclined or prone to engage in such behaviors, no other conclusions will be drawn.

CONCLUSIONS

The present investigation presents evidence to suggest a basic need to move away from simplistic ways of analyzing and conceptualizing delinquency. Since delinquency is not the result of a single causal factor, there is little use for research which examines only one or two variables which may be highly correlated with delinquency. Many variables and their complex interactions need to be examined to determine their relationships to certain ethnic groups, age groups, etc., and the many ways in which delinquency can be viewed.

REFERENCES

Braught, G. N., Brakarsh, D., Follingstad, D., and Berry, K. L. Deviant drug use in adolescence: A review of psychosocial correlates. *Psychological Bulletin*, 1973, *79*, 92-106.

Cartwright, S., Tomson, B., and Schwartz, H. *Gang Delinquency*. Monterey, California: Brooks & Cole, 1975.

Chilton, R. J. Continuity in delinquency area research: A comparison of studies for Baltimore, Detroit, and Indianapolis. *American Sociological Review*, 1964, *29*(1), pp. 71-83.

Cohen, K. *Delinquent Boys: The Culture of the Gang*. Glencoe, Illinois: Free Press, 1955.

Davis, R. D. *Findings of the Probation Management Alternatives Project*. Albuquerque, New Mexico: Juvenile Probation Department, 1976 (June).

Elliott, D. S. Delinquency, school attendance, and dropout. In R. Knudten (Ed.), *Crime, Criminology, and Contemporary Society*. Homewood, Illinois: Dorsey Press, 1970.

Elliott, D. S. and Voss, H. L. *Delinquency and Dropout*. Lexington, Massachusetts: D. C. Heath and Company, 1974.

Empey, L. T. and Erickson, M. L. Hidden delinquency and social status. *Social Forces*, 1966, *44*(4), pp. 546-554.

Feshback, S. Aggression. In P. H. Mussen (Ed.), *Carmichael's Manual of Child Psychology*. New York: Wiley, 1970.

Gardiner, M. *The Deadly Innocents: Portraits of Children Who Kill*. New York: Basic Books, 1976.

Harris, R. J. *A Primer of Multivariate Statistics*. New York: Academic Press, 1975.

Hirschi, T. *Causes of Delinquency*. Berkeley: University of California Press, 1969.

Hook, J. F. Rating delinquent behavior. *Psychological Reports*, 1970, 27, pp. 155-158.

Kerlinger, F. N. and Pedhazer, E. J. *Multiple Regression in Behavioral Research*. New York: Holt, Rinehart and Winston, 1973.

Maccoby, E. E. and Jacklin, C. N. *The Psychology of Sex Differences*. Stanford, California: Stanford University Press, 1974.

McCord, J. and McCord, W. The effects of parental role model on criminality. *Journal of Social Issues*, 1958, *14*(3), pp. 66-75.

Monahan, T. P. Family status and the delinquent child: A reappraisal and some new findings. *Social Forces*, 1957, *35*, pp. 250-258.

Nye, F. I., Short, F., Jr., and Olson, V. J. Socioeconomic status and delinquent behavior. *American Journal of Sociology*, 1958, *63*, pp. 381-389.

Polk, K. Schools and the delinquency experience. *Criminal Justice and Behavior*, 1975, *2*(4), pp. 315-338.

Polk, K. and Halferty, D. Adolescence, commitment, and delinquency. *Journal of Research on Crime and Delinquency*, 1966, *4*, pp. 82-96.

Rosenquist, C. M. and Megargee, E. I. *Delinquency in Three Cultures*. Hogg Foundation: University of Texas Press, 1969.

Shaw, C. R. and McKay, H. D. *Juvenile Delinquency in Urban Areas*. Chicago: University of Chicago Press, 1942.

Stullken, E. H. Misconceptions about juvenile delinquency. *Journal of Criminal Law, Criminology and Police Science*, 1956, *46*(6), pp. 833-836.

Tobias, J. J. The affluent suburban male delinquent. *Crime and Delinquency*, 1970, *16*, pp. 273-279.

Toby, J. The differential impact of family disorganization. *American Sociological Review*, 1957, *22*, pp. 505-512.

Walberg, H. J. Urban schooling and delinquency: Toward an integrative theory. *American Educational Research Journal*, 1972, *9*(2), pp. 285-300.

Wilkinson, K. The broken family and juvenile delinquency: Scientific explanation or ideology? *Social Problems*, 1974, *21*(5), pp. 726-739.

Willie, C. V. The relative contribution of family status and economic status to juvenile delinquency. *Social Problems*, 1967, *5*, pp. 326-335.

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[1] This article is part of the author's doctoral dissertation, *The complex relationships among selected family, educational, and cultural variables and sex to specific indicators of juvenile delinquency* (University of New Mexico, 1979).

[2] Since 90 percent of all offenders were living with their natural mothers, the proportions of juveniles living with stepmothers was too low and with their natural mothers too high to include in the analyses. The combinations of stepfather/natural mother, stepmother/natural father, and stepfather/stepmother were also eliminated for the same reason.

[3] A complete breakdown of all *F* values, degrees of freedom, and R^2 may be obtained by writing directly to the author.

The Contemporary Adolescent Delinquent: Intellectual or Impulsive?

Thomas F. Reilly, David Ross, and Lyndal M. Bullock

INTRODUCTION

Violence is a term with differing connotations. It can be an "exertion of physical force so as to injure or abuse" or it can be "intense, turbulent, . . . and often destructive action or force" (*Webster's New Collegiate Dictionary*, 1973,). Violence differs from force in that violence is behavior evidenced for its own sake, thus it appears as needless (Lief, 1968).

Human violence is determined by the individual's interaction with the environment (Halleck, 1973). Considering the 47 percent increase in violent crime over the five-year period from 1968 to 1973 (*Crime in the U.S.*, 1973), that interaction has become much more heated and physical. Previous research suggests that violence and intelligence are related (Heilbrun, 1979) especially when adaptive abilities are considered.

The relationship between the potentially violent youth and accompanying intelligence may be further influenced by a history of child abuse, alcoholic parents, and dehumanized relationships (Jampolsky and Haight, 1974). Buttons (1973), study indicated a high correlation between the amount and severity of physical punishment endured by children and the intensity of antisocial aggression displayed during adolescence. However, Kozel, Boucher, and Garofalo (1972) determined that prior violence is the only predictor for future violence.

Tarnopol (1970) found that delinquents with higher intelligence levels commit more crimes and are arrested less often than their peers having lower intelligence levels. Ross (1971) concurs by stating that "intelligence is a major ingredient in a child's pattern of coping." Conversely, Ausubel (1965) indicated that lower intelligence is unrelated to delinquency when taken as an entity unto itself. Adaptive abilities have been demonstrated to be related to intelligence (Robinson and Robinson, 1976). Aggressive behavior (which may be a reaction to poor adaptive ability) is determined through environmental conditions, and is situation specific (Bailey, 1976). Due to various possible disparities between the verbal, performance, and full-scale I.Q. scores, differing intelligence levels are implied for different I.Q. levels (Lewandowski and Sacuzzo, 1975).

The importance of the accumulation of accurate diagnostic data cannot be over emphasized since such data often is the link in determining an effective rehabilitation/intervention strategy. The popularity of the Wechsler Scales is at least partly due to their potential use as a diagnostic tool (Sa-

cuzzo and Lewandowski, 1976), but these are insufficient data if used alone. Age does not significantly influence the patterns of scaled scores (Holt, 1968). Cohen (1959) determined that child and adult achievement on the Wechsler Intelligence Scale for Children—Revised (WISC-R) and Wechsler Adult Intelligence Scale (WAIS) are comparable from age 13 years, six months, on.

The most characteristic pattern of performance for adolescent sociopaths on the WAIS is a higher Performance IQ than Verbal IQ (Wechsler, 1958). A Performance IQ which is significantly above the Verbal IQ is primarily found in individuals who are acting-out. Personality types typically scoring higher on the Performance section include psychopaths, sociopaths, narcissistic character disorders (Blatt and Allison, 1968; Gilber, 1969; Guertin, Rabin, Frank, and Ladd, 1962), and adolescent delinquents (Glueck and Glueck, 1964; Pope and Scott, 1967).

Many delinquents are simulteneously functioning below their ability level and are consequently behind in achievement (Raymaker, 1974). Of those individuals admitted to juvenile detention centers, 80 percent are from two to five years below grade-level achievement in at least one of the areas of (a) reading, (b) spelling, or (c) arithmetic (*A Voice in the Wilderness*, 1976).

The present study represented an examination of the relationship between the commission of violent behavioral offenses and possible mitigating intellectual factors. The investigator's interest was in determining if the commission of violent acts is related to intellectual factors. A second question considered was whether academic achievement was commensurate with quantified intellect.

PURPOSE OF THE PRESENT STUDY

The purpose of the present investigation was to further illustrate the relationship between violent behavioral offenses and intellectual characteristics in adjudicated adolescents as determined respectively by adjudication for a specific behavioral offense and subtest patterns on the Wechsler Intelligence Scales (Weschler, 1958, 1974). The study is based on 177 randomly selected case studies of adjudicated adolescents (*Table 1*) who were referred to, and tested by, a licensed psychologist acting as a consultant to a juvenile department in an urban center located in the Southwestern part of the United States.

METHODS AND PROCEDURES

Subjects

The subjects in this investigation were randomly selected from the case files of a juvenile department located in the Southwestern United States. The random sample of subjects consisted of 177 adolescents between the ages of 13 years, six months and 18 years, four months. The subjects had been referred between the years 1974 and 1978 due to the commission of a specific behavioral offense which resulted in adjudication.

The ethnicity, sex, and age range of all 177 subjects selected for the study are delineated in *Table 1*.

TABLE 1

Behavioral Offenses of All Subjects Reported by Sex and Race

Behavioral Offenses	Total Numbers		Sex				Race					
			M		F		B		W		O	
	N	%	N	%	N	%	N	%	N	%	N	%
Status	67	38	37	21	30	17	4	2	58	33	5	3
Crimes Against Property	58	33	55	31	3	2	17	10	38	21	3	2
Crimes Against Person	52	29	49	28	3	2	22	12	29	16	1	.5

Of the 177 subjects, there were 139 Males and 38 Females. Within this group there were 43 Black subjects, 125 White subjects, and nine subjects who were either Mexican-American or American Indian. There were 38 subjects in the age range of 13 years, six months to 14 years, 11 months; 84 subjects were in the age range of 15 years, 0 months to 16 years, 11 months; and 55 subjects were in the age range of 17 years, 0 months to 18 years, 11 months. Further categoric devisions can be made by behavioral offense. Data in *Table 2* illustrates those divisions.

Each of the youths formally identified as a juvenile offender completed a comprehensive psychological, intellectual and scholastic evaluation administered by a consulting psychologist to the juvenile department. The results of the intellectual and scholastic evaluations will be delineated later in this paper.

Materials

Four instruments were utilized in obtaining a data base for each subject's case file. The instruments were administered by a consulting psychologist to a juvenile department. The instruments were the (a) Wechsler Intelli-

TABLE 2

Subjects Utilized in the Present Study as Reported by Age Range, Race, and Sex

C. A. Range			Race of Subjects															
							B				W				O			
			M		F		M		F		M		F		M		F	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
13.6 - 14.11	38	21	17	10	21	12	1	.2	1	.5	14	8	18	10	-	-	2	1
15.0 - 16.11	84	47	73	41	11	6	16	9	-	-	55	31	9	5	2	1	2	1
17.0 - 18.11	55	31	49	28	6	1	22	12	1	.5	25	14	4	2	2	1	1	.5
TOTALS	177		139		38		41		2		94		31		4		5	

gence Scale for Children (Wechsler, 1949), (b) Wechsler Intelligence Scale for Children—Revised (Wechsler, 1974), (c) Wechsler Adult Intelligence Scale (Wechsler, 1955), and (d) the Wide Range Achievement Test (Jastak and Jastak, 1965).

Statistical design

Information obtained from the 177 case studies of adjudicated adolescents were analyzed and will be summarized and presented in tabular form. Descriptive statistics were used to describe the characteristics of the sample population.

The data obtained from the sample population have been illustrated in tabular form in the areas of behavioral offense and intellect. Common factors occuring in each table include: (A) age, (B) race, and (C) sex. Data have been reported in frequencies, percentages, means, ranges, and *chi squares*.

Data analysis

Data were obtained on the behavioral, intellectual, reading and arithmetic functioning of all 177 subjects who were selected for the study. The data in *Table 3* illustrate the (a) number of subjects by ethnicity, (b) $\bar{X}$ IQ, (c) $\bar{X}$ C.A., (d) $\bar{X}$ academic achievement levels in the areas of reading and arithmetic for all subjects utilized in the investigation, and (e) number of ethnic participants in each behavioral offense.

Results

Descriptive statistics were used to analyze the data. The chi-square contingency was used to analyze relationships between:

1. intelligence level and type of offense

TABLE 3

Behavioral and Scholastic Achievement Including Reading, Arithmetic and Intelligence Quotient Scores for All Subjects Reported by Race

SUBJECTS	N	%	$\bar{X}$ I.Q.	$\bar{X}$ C.A.	$\bar{X}$ Reading	$\bar{X}$ Arithemtic	Behavior	N	%
All Blacks	43	24%	79.5	16 yrs. - 6-4/5 mos.	[1]4 yrs. - 2 mos.	[4]3 yrs. - 11 mos.	Status Offender	4	2
							Crimes Against Property	17	10
							Crimes Against Person	22	12
All Whites	125	71%	92.8	15 yrs. - 9% mos.	[2]7 yrs. - 6 mos.	[5]5 yrs. - 7 mos.	Status Offender	58	33
							Crimes Against Property	38	21
							Crimes Against Person	29	16
All Others	9	5%	84.8	15 yrs. - 7% mos.	[3]5 yrs. - 8 mos.	[6]4 yrs. - 8 mos.	Status Offender	5	3
							Crimes Against Property	3	2
							Crimes Against Person	1	5

*Mexican-American & American Indians

[1]40 Subjects [3]8 Subjects [5]36 Subjects

[2]109 Subjects [4]17 Subjects [6]8 Subjects

2. ethnicity and type of offense
3. sex and type of offense
4. age and type of offense

There was no statistical significance in the relationship between intelligence level and type of offense. However, statistical significance beyond the .001 probability level was indicated for the three remaining relationships.

Discussion

Tabular data previously presented are not all statistically significant. However, certain elements of the information are suggestive of possible trends and deserve further consideration. In the following section, the investigators will relate significant tabular data to the literature.

Behavioral offense

Cohen (1955) feels that continued frustration regarding one's attempts at success will likely lead a person to crime. Conversely, Yochelson and Samenow, (1977) believe that "thinking patterns" in habitual criminals may be distinguished from non-criminals.

Individuals charged with status offenses such as truancy and runaway represent more than one-third of the national case load being processed through our juvenile court system (Mauser, 1974). In the present investigation, 40 percent (N-67) of the behavioral offenses were status in nature. Of the 67 status offenders, 55 percent (N-37) were males, 87 percent (N-58) were Caucasian, and 48 percent (N-32) were in the age range 15.0 to 16.11. Additional information is delineated in *Table 4*.

Property crimes have been demonstrated to be the largest single category of offense (Oklahoma Association for Children with Learning Disabilities, 1974). Numerically, property offenses were not the largest group represented in the present investigation, (N-58) however, they did comprise 31 percent of the offenses committed in the present investigation. Of the 58 property offenders in the present investigation, 94 percent (N-55) were

TABLE 4

Race and Sex of Status Offenders as Reported by Chronological Age Range

Age Range	Black				Anglo				Other				Total	
	M		F		M		F		M		F			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
13.0 - 14.11	2	3	1	1	8	12	16	24	1	1	2	3	30	45
15.0 - 16.11	1	1	-	-	22	33	8	12	-	-	1	1	32	48
17.0 - 18.11	-	-	-	-	2	3	2	3	1	1	-	-	5	7
TOTALS	3		1		32		26		2		3		67	

males, 65 percent (N-38) were Caucasian, and 48 percent (N-28) were in the age range 17.0 to 18.4 Additional information is delineated in *Table 5*.

More than half of all serious crimes in the United States are committed by youths age 10 to 17. Since 1960, juvenile crime has risen twice as fast as that of adults (The Youth Crime Plague, 1977). In the five-year period from 1968 to 1973, violent crime increased 47 percent (*Crime in the U. S.*, 1973). In the present investigation, crimes-against-persons constituted 29 percent (N-52) of the total behavioral offenses. Of the 52 person offenders 94 percent (N-49) were males, 59 percent (N-29) were Caucasian, and 57 percent (N-28) were in the age-range 17.0 to 18.4. Additional information is delineated in *Table 6*.

Intellectual functioning

Although Ausubel (1965) has indicated that lower intelligence is unrelated to delinquency, Ross (1971) has stated that "intelligence is a major ingredient in a child's pattern of coping." Reilly and Bullock (1979) however, hypothesize that lower intelligence increases suggestibility and the probability of being caught. In the present investigation, the $\bar{X}$ IQ for the total group was 90.26 which placed them within the low average range of intellectual functioning. A composite view of the intellectual attainment for each category of behavioral offenders is illustrated in *Table 7*.

Adolescents falling in the lower spectrum of the low-average range of intelligence can be expected to encounter difficulties in adjustment especially when confronted with peer pressure. Interestingly, each of the behavioral offense categories shared the same sub-test for their highest score (*i.e.*, Picture Arrangement) and the same group of subtests for their lowest scores (*i.e.*, Information, Comprehension, and Vocabulary). Data presented in *Table 8* illustrate the behavioral offenses and the subtest scores.

These subtest scores may be interpreted to mean that the subjects are significantly below the norm in their basic knowledge about the world. This can be influenced by school attendance, general awareness, and reading abil-

TABLE 5

Race and Sex of Property Offenders as Reported by Chronological Age Range

Age Range	Black				Anglo				Other				Total	
	M		F		M		F		M		F			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
13.6 – 14.11	1	1	–	–	4	7	2	3	–	–	–	–	7	12
15.0 – 16.11	4	7	–	–	22	38	1	1	1	1	1	1	29	50
17.0 – 18.11	12	21	–	–	9	16	–	–	–	–	1	1	22	38
TOTALS	17		–		35		3		1		2		58	

TABLE 6

Race and Sex of Person Offenders as Reported by Chronological Age Range

Age Range	Black				Anglo				Other				TOTAL	
	M		F		M		F		M		F			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
13.6 - 14.11	-	-	-	-	1	2	-	-	-	-	-	-	1	2
15.0 - 16.11	11	21	-	-	12	23	-	-	-	-	-	-	23	44
17.0 - 18.11	10	19	1	2	14	27	2	4	1	2	-	-	28	54
TOTALS	21		1		27		2		1		-		52	

ity. The relatively high Picture Arrangement score could mean that, as a whole, this population could be considered as shrewd and manipulative. However, when Verbal, Performance, and Full-Scale Intelligence scores are considered for the sample population, the logic of the previous statement is dubious. Further, if one considers the low academic achievement levels of adjudicated adolescents in the present investigation (refer to *Table 8*), one should be able to readily focus on the impact of intellectual items measured by the Vocabulary subtest of the Wechsler Scales.

Chronological age

The mean chronological age for the 177 subjects selected for the study was 16 years, one month. This data supports that of previously reported studies (Mukherjee, 1971; Ullmann and Krasner, 1975; Wolfgang, Figlio, and Sellin, 1972) which indicated that youth committing criminal offenses usually start around age 16.

Race

Especially in the United States, race has been found to be an important variable in its relationship to crime and delinquency (Mukherjee, 1971). Black-

TABLE 7

Mean Intellectual Attainment for all Subjects as Reported by Behavioral Offense

	Verbal	Performance	Full Scale
Status	88.4	94.2	90.5
Crimes Against Property	87.4	91.2	90.2
Crimes Against Person	90.4	91.8	90.0

TABLE 8

Maximum and Minimum $\bar{X}$ Subtest Scores as Reported by Behavioral Offense

Offense Classification	Highest Subtest Score Average		Lowest Subtest Score Average	
	Picture Arrangement	Information	Comprehension	Vocabulary
Status	9.76	7.15	7.72	8.07
Crimes Against Property	9.11	6.11	7.17	7.50
Crimes Against Persons	9.16	6.53	7.20	7.20

white differences in delinquent activity can be at least partially explained through achievement differences in academic areas (Hirschi, 1969; Reilly and Bullock, 1979). Ahlstrom and Havighurst (1971) found that maladaptive late adolescent adjustments among blacks was much higher than whites. Further, blacks and males have been found to be more criminally aggressive than whites or females based on their high rates of crime against persons (Wolfgang, 1969).

In the present investigation, blacks in status offenses and Crimes-Against-Person offenses, were younger than whites (15.3-14.8 and 16.10-16.4) involved in the same type offenses. In the Crimes-Against-Property category, blacks were a full year older than whites (17.3 - 16.3). Blacks made up 24 percent (N-43) of the sample population, Whites made up 71 percent (N-125) of the population while other racial groups comprised the remaining 4 percent (N-7) of the population.

In terms of serious offenses, *e.g.*, violent, person offenses, blacks made up 42 percent (N-22) of the offenders comprising the violent (Crimes-Against-Person) category as compared to 24 percent (N-43) of the total sample population. Conversely, whites comprised 55 percent (N-29) of the violent offense category, but 71 percent (N-125) of the total sample population. As might be expected, more whites than blacks were subjects in the present investigation (*Table 1*) due to the numerical difference in the general population. However, in terms of adjudication for specific violent offenses, whites were adjudicated less frequently than blacks.

Sex

The primary referrals for delinquent males include larceny, burglary, and motor vehicle theft (*President's Commission on Law Enforcement and Administration of Justice*, 1967). The offenses most common to adjudicated females are sex violations (Cohen, Granger, Provence, and Solnit, 1975), incorrigibility, and running away (Tappan, 1949), with females admitting to only 1 percent of serious offenses (Elliott and Voss, 1974).

> More girls are getting involved in violent crime. From 1970 to 1975, the arrest rate of girls under 18 for serious offenses climed 40 percent v. 24 percent for boys. In 1975, 11 percent of all juveniles arrested for violent crimes were female (*The Youth Crime Plague*, 1977, p. 19).

In the present investigation, 80 percent (N-141 of the sample population were males. Of the 141 males in the sample population, only 28 percent (N-40) were involved in serious behavioral offenses. There were more males involved in crimes-against-property, 31 percent (N-55) and less in status offenses, 21 percent (N-37).

Academic achievement

The worse the child's performance in school, the more likely he is to become delinquent (Wooten, 1967). Culbertson and Schrink (1974) believe that school is one of the three most important aspects of the delinquent's environment.

A popular theory regarding delinquent underachievement in school is related to the alienation between parents and siblings which can stymie learning (McCord, McCord, and Zola, 1959). Whatever reason is ascribed to the failure of the delinquent population to achieve academically, there is a disproportionate contribution to delinquency from those youth failing in school (Radzinowicz and Wolfgang, 1971). Further, the contribution schools are making to delinquency will continue until and unless educational changes are made in the schools (Clarizio and McCoy, 1976).

Many delinquents are simultaneously functioning below their ability level and are consequently behind in achievement (Raymaker, 1974). Of those individuals admitted to detention centers, 80 percent have been shown to be from two to five years below grade-level achievement in at least one of the areas of: (A) reading, (B) spelling, or (C) arithmetic (*A Voice in the Wilderness*, 1976). Schmideberg, (1961) declared that a reading retardation of even three months should be regarded seriously and remediated immediately.

In the present investigation, violent offenders were found to have the lowest mean Reading Achievement score (6.5) while the mean Arithmetic Achievement score for all three categorical offenses was the same (5.1). This is consistent with Raymaker (1974) and others in terms of being underachievers rather than achievers in academic pursuits.

The range in Reading and Arithmetic achievement for the sample population was respectively 1.0 to 15.0 and 1.0 to 13.0. The achievement scores of this sample population were consistent with *A Voice in the Wilderness* (1976), and Schmideberg (1961).

The major research question in this study was very basic. Could a relationship between violent behavioral offenses and intellect be established? The results suggest that there is not a relationship between intelligence (as measured by the Wechsler Scales) and violence. However, there is evidence to support previous research regarding the relationships between age, race, and sex and specific behavioral offenses.

Through analysis of behavioral, demographic, and scholastic variables, behavioral patterns can be established. The behavioral patterns of those adolescents who have been processed through the juvenile justice system should be of interest to school personnel. Basically, the data reported is available to school personnel and if looked at analytically, identification

TABLE 9

Mean Reading and Arithmetic Scores for All Subjects as Reported by Behavioral Offense

	Mean Reading and Arithmetic Scores		
	ALL	WHITE	BLACK
Status	6 yrs. 10 mos. to 5 yrs. 1 mo.	7 yrs. 5 mos. to 5 yrs. 4 mos.	2 yrs. 9 mos. to 3 yrs. 2 mos.
Crimes Against Property	7 yrs. 4 mos. to 5 yrs. 1 mo.	7 yrs. 5 mos. to > yrs. 8 mos.	4 yrs. 10 mos. to 4 yrs. 2 mos.
Crimes Against Person	6 yrs. 5 mos. to 5 yrs. 1 mo.	7 yrs. 11 mos. to 6 yrs. 2 mos.	4 yrs. 5 mos. to 3 yrs. 11 mos.

systems could, perhaps, be constructed and implemented to assist schools in the prevention of learning and/or behavioral problems which have so often characterized the youth of our schools.

REFERENCES

A Voice in the Wilderness. Oklahoma Association for Children with Learning Disabilities: *Newsletter*, March 1976, *4*(5).

Ahlstrom, W. and Havighurst, R. *400 Losers*. San Francisco, CA: Jossey-Bass, 1971.

Ausubel, D. *Psychological factors in juvenile delinquency*. Unpublished manuscript, 1965.

Bailey, R. *Violence and aggression*. New York: Time-Life Books, 1976.

Blatt, S. and Allison, J. The intelligence test in personality assessment. In A. Rabin (Ed.), *Projective techniques in personality assessment*. New York: Springer, 1968.

Button, A. Some antecedants of felonious and delinquent behavior. *Journal of Child Clinical Psychology*. 1973, *2*(3), pp. 35-37.

Clarizio, H. and McCoy, G. *Behavior disorders in children* (2nd edition). New York: Thomas Y. Crowell Company, 1976.

Cohen, A. *Delinquent boys*. New York: The Free Press, 1955.

Cohen, D., Granger, R., Provence, S., and Solnit, A. Mental health services, in N. Hobbs (Ed.), *Issues in the classification of children* (Vol. 2). San Francisco, CA: Jossey-Bass, 1971.

Cohen, J. The factorial structure of the WISC at ages 7-6, 10-6, and 13-6. *Journal of Consulting Psychology*, 1959, *23*(4), pp. 285-299.

Crime in the United States. Uniform crime reports for the United States. Washington, D.C. U.S. Government Printing Office, 1973.

Culbertson, R. and Schrink, J. The juvenile delinquent and his environment. In R. Hardy and J. Cull (Eds.), *Psychological and vocational rehabilitation of the youthful delinquent*. Springfield, IL: Charles C. Thomas, 1974.

Elliott, D. and Voss, H. *Delinquency and dropout*. Lexington, Massachusetts: D. C. Heath & Company, 1974.

Gilbert, J. *Clinical psychological tests in psychiatric and medical practice*. Springfield, IL: Charles C. Thomas, 1969.

Glueck, S. and Glueck, E. *Ventures in criminology*. Cambridge, Massachusetts: Harvard University Press, 1964.

Guertin, W., Rabin, A., Frank, G., and Ladd, C. Research with the Wechsler Intelligence Scale for Adults: 1955-1960. *Psychological Bulletin*, 1962, 59, pp. 1-26.

Halleck, S. A multi-dimensional approach to violence. In D. Chappel and J. Monahan, (Eds.), *Violence and criminal justice*. Lexington, Massachusetts: D. C. Heath & Company, 1973.

Heilbrun, A. Psychopathy and violent crime. *Journal of Consulting and Clinical Psychology*, 1979, *47*(3), pp. 509-516.

Hirschi, T. *Causes of delinquency*. Berkeley, The University of California Press, 1969.

Holt, R. (Ed.), *Diagnostic psychological testing*. New York: International University Press, 1968.

Jampolsky, G. and Haight, M. *A picture of violence in children and the function of fantasy*. Paper presented at the 51st Annual Meeting of the American Orthopsychiatric Association, San Francisco, April, 1974 (ERIC Reproduction Service No. ED 104 114).

Jastak, J. and Jastak, S. *Manual for the Wide Range Achievement Test*, Revised Edition. Wilmington, Delaware: Guidance Associates, 1965.

Kozel, H., Boucher, R., and Garafalo, R. The diagnosis and treatment of dangerousness. *Crime and Delinquency*, 1972, *18*, pp. 371-392.

Lewandowski, D. and Sacuzzo, D. Possible differential WISC patterns for retarded delinquents. *Psychological Reports*, 1975, *37*, pp. 887-894.

Lief, H. Contemporary forms of violence. In S. Endleman, (Ed.), *Violence in the streets*. Chicago: Quadrangle, 1968.

Mauser, A. Learning disabilities and delinquent youth. *Academic Therapy*, 1974, *9*(6), pp. 389-402.

McCord, W., McCord, J., and Zola, I. *Origins of crime*. New York: Columbia University Press, 1959.

Mukherjee, S. *A typological study of school status and delinquency*. University of Pennsylvania, 1971.

Oklahoma Association for Children with Learning Disabilities. *Learning disabilities and predelinquent behavior of juveniles*. LEAA Grant Number 72J94/08-022. September 15, 1973-May 15, 1974.

Pope, B. and Scott, W. *Psychological diagnosis in clinical practice*. New York: Oxford University Press, 1967.

President's Commission on Law Enforcement and Administration of Justice. *The Challenge of Crime in a Free Society*. Washington, D.C.: U.S. Government Printing Office, 1967.

Radzinowicz, L. and Wolfgang, M. (Eds.). National violence commission on the causes and prevention of violence. *Crime and Justice, Vol. 1, The criminal in society*. New York: Basic Books, Inc., 1971.

Raymaker, S. Some indices of prediction of delinquent behavior. In R. Hardy & J. Cull (Eds.), *Psychological and vocational rehabilitation of the youthful delinquent*. Springfield, Illinois: Charles C. Thomas, 1974.

Reilly, T. and Bullock, L. Academic and intellectual functioning of adjudicated adolescents: A status report based on randomly selected case studies. *Journal of Behavioral Disorders*, 1979, *4*(4), pp. 241-249.

Robinson, N. and Robinson, H. *The mentally retarded child* (2nd edition). New York: McGraw-Hill Book Company, 1976.

Ross, R. I.Q. changes in hospitalized retardates. California Mental Health Research Digest, 1971, *9*, 30.

Sacuzzo, D. and Lewandowski, D. The WISC as a diagnostic tool. *Journal of Clinical Psychology*, 1976, *32*(1), pp. 115-124.

Schmideberg, M. Reading retardation and delinquency. In C. Wolcutt (Ed.), *Tomorrow's illiterates: The state of reading instruction today*. Boston: Little, Brown, & Co., 1961.

Tarnopol, L. Delinquency and minimal brain dysfunction. *Journal of Learning Disabilities*, 1970, *3*(4), pp. 200-207.

Tappan, P. *Juvenile delinquency*. New York: McGraw-Hill, 1949.

Ullmann, L. and Krasner, L. *A psychological approach to abnormal behavior* (2nd Ed.). Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1975.

Webster's New Collegiate Dictionary. Springfield, Massachusetts: G. & C. Merriam Company, 1973, p. 1206.

Wechsler, D. *Manual for the Wechsler Adult Intelligence Scale*. New York: The Psychological Corporation, 1955.

Wechsler, D. *Manual for the Wechsler Intelligence Scale for Children*. New York: The Psychological Corporation, 1949.

Wechsler, D. *Manual for the Wechsler Intelligence Scale for Children—Revised*. New York: The Psychological Corporation, 1974.

Wechsler, D. *The measurement and appraisal of adult intelligence* (4th Ed.). Baltimore: Williams & Wilkins, 1958.

Wolfgang, M., Figlio, R., and Sellin, T. *Delinquency in a Birth Cohort*. Chicago: The University of Chicago Press, 1972.

Wolfgang, M. Victim precipitated homicide. In D. Cressey and D. Ward (Eds.), *Delinquency, crime, and social process*. New York: Harper & Row, 1969.

Wooton, B. Social science and social pathology. In T. Hirschi and H. Selvin, *Delinquency research: An appraisal of analytic methods*. New York: The Free Press, 1967.

Yochelson, S. and Samenow, S. *The criminal personality, Vol. 1: A profile for change*. New York: Jason Aranson, 1976.

Youth crime plague, *Time*, July, 1977.

Youth crime plague, *Time*, July, 1977, 19.

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Chronic Juvenile Offenders: A Preliminary Investigation

M. Winston Egan and Ronald Lynn Oldroyd

INTRODUCTION

In the past two decades there has been an increase of delinquency on a national level. The National Institute of Juvenile Justice and Delinquency Prevention (1976) states that, "between 1960 and 1974, the increase in delinquency cases more than doubled (146 percent increase) compared to 37 percent increase in the number of children age 10 through 17" (p. 5). In 1974 there were 1,252,700 juvenile delinquency cases in the United States. This represented a 9 percent increase over 1973's total of 1,143,700 cases. The population between the ages of 10 and 17 increased only .2 percent of the total population, from 33,377,000 in 1973 to 3,443,754 in 1974.

With the increase of delinquency there has also been an equal increase in the committing of serious crimes. Referring to the arrest trends in the United States from 1960 to 1974, Kelley (1975) stated, "For a group of serious offenders, *i.e.*, criminal homicide, forcible rape, burglary, robbery, aggravated assault, larceny and auto theft the combined increase between 1960 and 1974 was 143 percent (*Table 30*, p. 182).

With the increase in crime and especially serious crimes, there have been several efforts to identify the chronic or habitual offender. Wolfgang, Figlio, and Sellin (1972) utilized a longitudinal birth cohort study in Philadelphia to gather information on delinquency. In this study there were a total of 10,214 youth; 1,613 of the youth were one time offenders. The remaining 8,601 offenses were committed by 1,862 of the population. In this study a chronic recidivist was a youth with any type of delinquent record and five or more referrals to the Court. Of the total 10,214, 18 percent (1,839) qualified for the chronic recidivist category. These youth accounted for 5,302 offenses or 52 percent of the total offenses committed.

Wolfgang and his associates (1972) succinctly identified the advantages inherent in identifying the chronic offender when they stated:

> It is clear, after close analysis of the chronic recidivist, that any social intervention that could stop these delinquent cases before they go beyond their fourth delinquency referral would decrease significantly the number of offenses committed by a birth cohort (p. 105).

The recommendation of the Wolfgang study, demonstrated the need for dealing with the chronic offender by identifying him statistically, or by other suitable methods. More recent longitudinal research conducted by Wolfgang (1977) continues to support the premise that intervention for the

chronic juvenile offender is critical particularly at the fourth or fifth offense. Wolfgang's research findings and recommendations should, however, be tempered in light of a review of research completed by Monahan (1977). His review indicated that there are severe problems associated with predicting violent behaviors in juveniles. An overprediction rate of 54 to 99 percent existed in the studies which he reviewed.

Referring to the statistical information from the state of Utah, a picture similar to that of the national level also emerged. In the past decade there has been an increase in referrals to the Juvenile Court from 29,094 in 1968 to 38,148 in 1978 (Utah State Juvenile Court, *Annual Report*, 1978). This increase in the number of referrals to the court, compared very favorably with the national increase.

In a birth cohort study completed by the Administrative Office of Utah Juvenile Court (1977), statistical information was reported which showed a need for a program to deal with the chronic offender. This study included 41,194 youth who were referred to the Juvenile Court between January 1, 1968 and December 31, 1975 and whose 18th birthday was on or before December 31, 1975. Of the total referred in this study, 59 percent (24,380) were one-time offenders. They accounted for only 42 percent (42,062) of the total offenses committed (100,980). The remaining 41 percent were recidivists to the court. They were responsible for committing 58 percent of the offenses.

Using the same definition of a chronic recidivist as Wolfgang, Figlio, and Sellin (1972), five or more delinquent referrals, the birth cohort study identified 11 percent (4,815) of the population as chronic juvenile offenders. These juveniles acounted for 24 percent (24,469) of the total offenses. *Figure 1* shows graphically what percentage of the youth committed what percentage of the offenses based on the number of referrals to the court.

Statistics for the Utah State Juvenile Court (1977) compared very closely with those of the birth cohort study (see *Figure 2*). In 1977, there were 13,241 youth referred to the court for 26,371 offenses. The ratios of referrals to offenses for each of the various categories (one to nine referrals) are very similar to those derived from the birth cohort study. The Utah State Juvenile Court *Annual Report*, 1976, states:

> the likelihood that a youth will commit a second degree felony on his first referral is 4 percent which increases to 11 percent after nine or more referrals. Third-degree felonies increase in likelihood from 5 percent to 9 percent of offenses committed on the first vs. the ninth or more. In comparison, a youth has a 42 percent chance of committing an infraction of Class C misdemeanor on his first referral which is reduced to less than half (17 percent) after nine or more referrals (p. 17).

Realizing a need to deal with the chronic juvenile offender in Utah and more specifically in the Second District Juvenile Court, there were two attempts to identify specific youth. In 1966, the court attempted to utilize a continuum system, however, without the aid of computer technology. The system was very time consuming and tedious. In addition the information derived from the system was rapidly out of date.

The first published report to identify chronic offenders was completed by the Utah Juvenile Court Office of Research in 1974. This report was an at-

tempt to determine the 100 most delinquent children, their normative char-

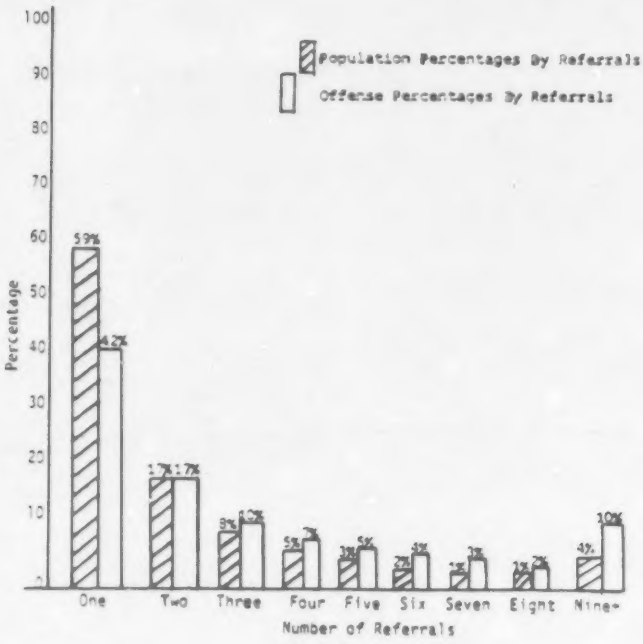

FIGURE 1

Percentages of youth and crimes based on the number of referrals to the court for the birth cohort (Utah State Juvenile Court *Birth Cohort Study*, 1977)

acteristics, some measure of their delinquency rate, and the distribution of offenders among judges.

A delinquency rank was utilized to rate the youth. The delinquency rank was made up of four measures, *i.e.*, number of referrals, average severity of offenses committed, recidivism rate, and age at qualification. Early in this research effort it was found that age was a discriminatory factor. As a result of this, two listings were developed. One listing for 15 years and older, and one for those under 15 years of age. The juveniles were then ranked most delinquent to least delinquent. This process and procedure for identifying the chronic juvenile offender was also less than adequate. The system itself was inordinately time consuming and was quickly out-of-date.

In the spring of 1977, the Second District Court of Utah Juvenile Court System again attempted to initiate a Chronic Offender Juvenile Program. This program had four specific purposes:

1. To utilize a Review Board for the purposes of identifying chronic juvenile offenders and making intervention recommendations for those labeled as such.
2. To fully utilize the potential of computer technology to assist the Review Board in making determinations and recommendations to the court.
3. To place the interests and protection of the community above those of the identified chronic juvenile offender.

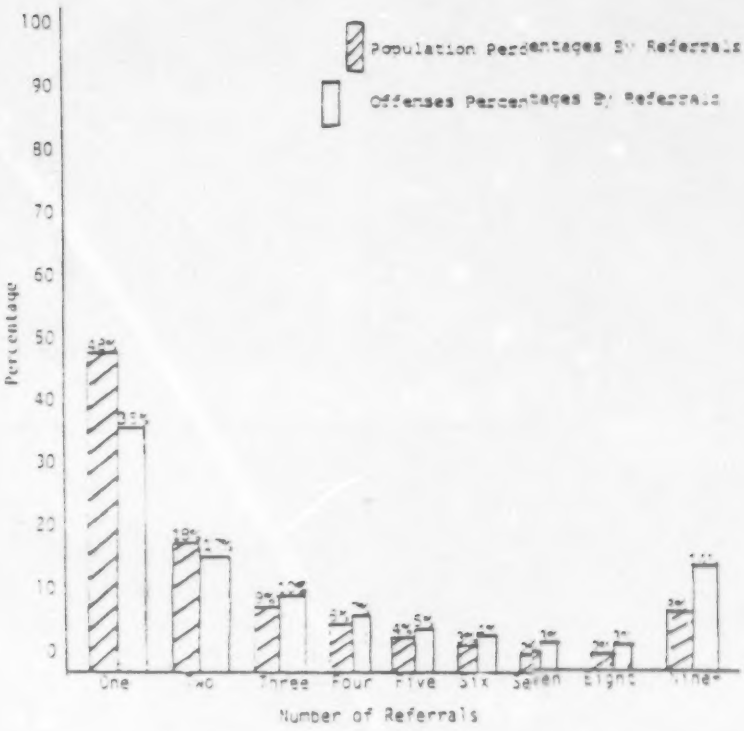

FIGURE 2

Percentages of youth and crimes based on the number of referrals to the court for 1977 (Utah State Juvenile Court *1977 Computer Report*)

4. To enhance the understanding of the community and agencies within community toward the action of the juvenile court as it dealt with chronic juvenile offenders.

The review board

The Review Board was comprised of six members. The board included a court representative, a local county sheriff, a high school principal, a social worker from the local mental health unit, a business man whose business had been burglarized by juveniles, and a parent from the neighborhood in which delinquency was prevalent. The board was established and developed for the following reasons:

1. It provided the court with a group of diversified persons who could evaluate the court and its effectiveness from an exterior perspective.
2. It provided the court with feedback and new ideas for youth who had exhausted its rehabilitative efforts.
3. It provided persons who were critics of the court an opportunity to become personally involved and thereby possibly change their critical perceptions.
4. It allowed members of the community to play an integral part in

identifying chronic juvenile offenders and making recommendations for their judicial disposition.

Identifying the chronic juvenile offender

Initial identification of the prospective chronic juvenile offenders was made possible through the utilization of an on-line computer processing and information system. This information gathering system, called PROFILE (Processing Records On-Line For Instant Listing and Evaluation) eliminated virtually all of the problems inherent in past attempts to develop and summarize data regarding chronic juvenile offenders. Information relative to type of offense committed, and demographic characteristics of the youth and family, were collected during an intake interview. This information was subsequently stored in the court's computer system for future retrieval and analysis. The PROFILE system utilizing intake data and other information created key documents such as intake receipt forms, petitions, summons, and judicial dockets.

In rendering a decision as to whether to label a juvenile as chronic, the Review Board had both objective and subjective information. The objective data included the following information: the youth's record, the average length of time between referrals, length of time since last referral, average severity of referrals, and the length of time the youth has been known to the court. The subjective data included information collected during various intake interviews, results of prior probationary efforts, an evaluation as to why the current problems tend to persist, school information, and results of psychosocial assessments. After these types of information were reviewed, the Review Board often chose to seek further information from the Court worker (probation counselor) to clarify any information which was unclear or incomplete. After reviewing each case in detail, the Board was then given the responsibility of (1) deciding whether the chronic juvenile offender label would be applied or not; and (2) developing recommendations for the juvenile if the label of chronic juvenile offender had been applied.

Youth selected for analysis by the Review Board were generated by the PROFILE system. In order to be selected, the youth in this study had to fall within the guidelines established by the Utah State Juvenile Court Administrative Office and the Second District Juvenile Court. These guidelines were as follows: (1) The youth had to receive a referral to the Court during the months of April through June 1977, (2) He had to fall in the M-9 category, *i.e.*, he had to have at least 75 severity points (one to nine scale: felony offense, six to nine points; misdemeanor offense, three to four points; infraction offense, two points; and status offense, one point) and at least nine referrals to the court, (3) He had to reside in Salt Lake County, and (4) The court had to have continuing jurisdiction over the youth.

Eleven youth were selected as candidates to be reviewed by the Board. All youth referred to the program were males. At the time they were selected, nine of them were 16 years of age and two were 15 years of age. Within two months of the selection process, however, four youths turned 17 years of age and one 16 years of age. The racial background of the youth was as follows: seven Caucasians, two Chicanos, one black and one mulatto (see *Table 1*).

TABLE 1

Demographic Information on the Eleven Youth

Youth	CJO	Age	Sex	Race	Number of Parents Living With	Combination of Parents	Religion Participation	Family Income
1	Yes	16	M	Caucasian	Two	Natural	LDS None	$20,000
2	Yes	16	M	Caucasian	Two	Natural	LDS None	20,000
3	Yes	16	M	Caucasian	Two	Natural	LDS None	10,000
4	Yes	16	M	Mexican/American	Two	Natural/Step	None	5,000
5	Yes	16	M	Mexican/American	Two	Natural	Catholic None	12,000
6	Yes	16	M	Caucasian	Two	Natural	LDS None	12,000
7	Yes	16	M	Caucasian	Two	Natural	LDS None	20,000
8	No	16	M	Black	Brother	Brother	Catholic	?
9	No	16	M	Caucasian	Two	Natural/Step	LDS 50%	15,000
10	No	16	M	Caucasian	Two	Natural	LDS None	12,000
11	No	16	M	Mulatto	One	Natural	?	7,000

Nine of the youth were living in two-parent families; seven were living with their natural parents, and two with one natural parent and one step-parent. One boy was living with just his mother and the eleventh was living with his brother at the time of his screening.

The annual family incomes of the boys ranged from $20,000 to $5,000. The average income was $13,000. Seven of the boys were from Latter-day Saint families; two were from Catholic families; one from a family with no religious preference; and one from a family whose religion was unknown.

In deliberating, rendering decisions, and making recommendations the Review Board worked very well together. Those members of the board who were critics of the juvenile court system prior to their involvement with the board gradually became less critical and much more understanding and supportive of the juvenile court process.

The board unanimously labeled seven of the eleven youth as chronic juvenile offenders. The actions of the Review Board coincided with the nine probation counselors' recommendations. In looking for differences between those labeled and those unlabeled as chronic juvenile offenders, it is difficult to find any discriminating factors. The demographic information gathered shows little difference between the two groups (see *Table 2*).

Other descriptive information gathered on the youth also reveal few differences. *Table 2* shows the record of each youth in terms of offenses, severity point totals, referral frequency, age at first referral, age at review, and school information. The averages for each of the categories vary only slightly. On face value the objective data do not appear to differentiate the labeled group from the nonlabeled group.

Following the actual review process, all youth were followed to see whether they would be referred again or whether they would continue to have serious problems. In the group labeled as chronic offenders, five of the seven received referrals back to the court. The sixth youth was referred to the Youth Development Center (YDC) of the state for review and the seventh youth was not referred back to the court in the eight months following his initial review. Of the five youths referred back, two were committed to the YDC, two were sent to the YDC for evaluation, and one was referred to a proctor advocate program.

Of those youth who were not labeled as chronic juvenile offenders, only one at follow-up (approximately eight months later) had been referred to the court. He was subsequently removed from his natural parents and home, and placed in a proctor advocate program. The remaining three youths were referral free at follow-up.

Another follow-up was conducted 19 months later to check on the legal status of each youth. Of the seven identified as chronic juvenile offenders with an average age of 18 years, 6 months, only one is currently on adult probation. Of those youth who were not labeled as chronic juvenile offenders, none of them is currently involved in any juvenile or adult incarceration or probation.

TABLE 2

Summary of the Total Court Records and the School Status of the Youth

Categories	Labeled CJO								Not Labeled CJO				
	1	2	3	4	5	6	7	AVG	8	9	10	11	AVG
Number of Felonies	14	13	10	16	17	14	4	12.6	11	17	13	9	12.5
Number of Misdemeanors	8	16	11	16	23	11	15	14.3	19	18	8	18	15.5
Number of Infractions	0	3	0	0	2	0	2	1	1	0	0	6	1.6
Number of Status Offenses	0	7	4	4	3	4	3	3.6	1	7	5	3	5
Severity Point Total	132	168	120	166	216	131	97	147.1	153	193	132	141	154.8
Severity Point Average	6	4.3	4.8	4.6	4.8	4.5	4	4.7	4.7	4.5	4.5	5	4.5
Referral Frequency per month	.8	2.4	4.6	2.2	2.1	4	3.9	3.9	2.6	?	1.7	2	2.1
Age at First Referral	16	12	10	12	11	9	13	12	12	10	13	12	12
Age at Review	16	16	16	16	16	16	16	16	16	16	15	15	15.5
Registered in School	No	Yes	Yes	Yes	Yes	No	Yes		No	No	Yes	No	
Percent Attendance	—	0	40	90	99	—	80		—	—	60	—	

SUMMARY

Utilizing the computer technology of the PROFILE system developed by Utah State Juvenile Court System, it was possible to efficiently and effectively identify youth as chronic juvenile offenders. A Review Board composed of diversified community representatives was effectively utilized: (1) to identify chronic juvenile offenders; (2) to make recommendations regarding programs and rehabilitation; (3) to evaluate the efficacy of certain judicial dispositions; (4) to enhance and even change the perceptions of persons who were critical of the decisions and dispositions of the juvenile court system; and (5) to balance the rights of individuals with the rights of communities. The information which appeared to have the greatest impact on the Review Board was that information which was provided by the probation counselors. Of the seven chronic juvenile offenders who were identified nineteen months earlier, only one of the seven is currently involved in an adult probation program. Because of the nature of this study and the number of subjects involved in this preliminary investigation, conclusions cited should be interpreted with appropriate caution.

REFERENCES

Kelley, C. M. Crime in the United States, *Uniform Crime Reports*, Washington, D.C.: U.S. Government Printing Office, 1975, *Table 30* "Total Arrest Trends 1960-1976."

Monahan, J. The prediction of violent behavior in juveniles. In *The serious juvenile offender*. Symposium of the Office of Juvenile Justice and Delinquency Administration, U.S. Department of Justice, Minneapolis, Minnesota, 1977.

National Institute of Juvenile Justice and Delinquency Prevention, *Juvenile Court Statistics 1974*, Law Enforcement Assistance Administration, Washington, D.C.: U.S. Government Printing Office, 1976.

Utah State Juvenile Court, Administrative Office, *Birth Cohort Study*, 1977.

Utah State Juvenile Court, *Annual Report, 1976*.

Utah State Juvenile Court, *Annual Report, 1977*.

Utah State Juvenile Court, *Annual Report, 1978*.

Utah State Juvenile Court, Administrative Office, *Second District Juvenile Court Hard Core Delinquents, Reports 1, 2, and 3, 1974*.

Wolfgang, M. E., Figlio, R. E., and Sellin, T. *Delinquency in a birth cohort*. Chicago: University of Chicago Press, 1972.

Wolfgang, M. E. From boy to man—from delinquency to crime. In *The serious juvenile offender*. Symposium of the Office of Juvenile Justice and Delinquency Administration, U.S. Department of Justice, Minneapolis, Minnesota, 1977.

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Self-Concept of Aggressive Youth: Research Implications

Ronald E. Fritsch and David Lutkemeier

INTRODUCTION

The functioning of self-concept is central to a discussion of aggressive adolescents. Self-concept has long been considered an important interpersonal adjustment factor (Combs, 1976; Roger, 1959; Lecky, 1945; and Mead, 1934). As such, a great deal of research has attempted to assess the self concept status of various groups, *e.g.*, academic underachievers, the physically handicapped, racial and cultural groups, and social-economic groups. These studies frequently report generally poorer self concept among groups that have difficulty meeting social and/or academic demands. Studies of self-concept, however, often show considerable inner group variability (Broida, Izard, and Cruickshank, 1950; Cox, Moore, and Hauck, 1974; Campbell, Hayden, and Davenport, 1977; Lutkemeier, 1979). A possible factor contributing to this variability is the broadness of the labels, *e.g.*, underachiever, handicapped and racial minority, used to classify these individuals.

A lack of specific population parameters coupled with vague or complex experimental variables further confuses empirical outcomes. This confusion becomes quickly apparent to those who review the literature on delinquent-aggressive youth self concept. The term "aggressive" may be defined differently in various studies. As a result the criteria for group selection is varied. Comparisons of group findings from past studies are difficult to formulate and support.

Since most self-concept studies on delinquents, globally defined as aggressive, reveal various response patterns, perhaps research efforts need to concentrate upon further subdivisions of delinquent aggression. Once delinquent aggression is operationalized, research efforts can focus upon two questions. First, will delinquents categorized by differing aggressive responses vary on self-concept variables? Second, will delinquents emitting the same type of aggression a different number of times differ on self-concept variables?

If we attempt to view delinquent aggression in pure form we can subdivide it into four categories. Category One consists of physical aggression and can be defined as an overt act which results in harm to another. Physically aggressive delinquents commit such overt acts as; murder, rape or assault. Category Two may be referred to as either instrumental or nondirected aggression. Operationally defined instrumental aggression consists of an attack on inanimate objects, *e.g.*, kicking a hole in the wall. Instrumentally ag-

gressive delinquents commit such arrest acts as arson or vandalism. Category Three consists of verbal aggression and may be defined as negative verbal responses directed towards a person, place or thing. Cursing, swearing and yelling at someone are concrete examples of verbal aggression. Verbally aggressive delinquents would commit such overt acts as disorderly conduct and ungovernable behavior. Category Four may be referred to as fantasy aggression and may be defined as an excessive form of withdrawal. Isolation of self for long periods of time can be an act of fantasy aggression. Delinquents indulging in fantasy aggression commit such overt acts as alcohol and drug offenses. A passive-aggressive category could be added but finds such an aggressive act dispersed throughout the other aggression categories.

Comparisons of delinquents categorized aggressive by the above mentioned aggression categories might provide some valuable self concept information. A set of questions for future investigation might focus on comparison of more specific subgroups of aggressive delinquents, *e.g.*, murderers versus arsonists.

Another set of comparisons can be generated on delinquent recidivists. For example, will delinquents emitting the same type of aggression, a different number of times (delinquents committing rape once and delinquents committing rape twice), differ on self concept variables.

Another difficulty with the research of self-concept of aggressive youth is the varity of self-concept measures used. Comparisons are blurred when different measures are employed.

In an attempt to overcome the measurement issue, Hammer and Fitts (1964) collected and reported the results of seven independent studies done with delinquent youths using the same self-concept rating instrument. The instrument used in these seven studies was the Tennessee Self-Concept Scale (TSCS) (Fitts, 1965). Hammer and Fitts reported highly consistent findings for these studies. Total self-concept was typically one to 1.5 standard deviations below instrument norms. Sub-scale profiles were remarkably similar from study to study.

The benefit of using the same self-concept measure across studies clearly results in more meaningful comparisons between studies. A self-concept scale such as the TSCS seems to be a good choice for investigation of self-concept function of adolescents as it is a reliable, easily understood, and quickly administered instrument. In addition, the TSCS can be obtained in either a research or counseling form, has established norms, and was designed for adolescent or older subjects. In order to make valid aggression study comparisons, a stable and specific delineation of aggression is needed, as is a consistently used self-concept measure. Hopefully the use of the suggested aggression subdivision and a self-concept measure such as the TSCS will result in more meaningful data in this important area of adolescent inquiry.

SUMMARY

The purpose of this paper has been to discuss two issues of research design that have limited the comparison value of aggressive youth self concept

studies, and to present means of dealing with these issues. The two areas identified were: (1) non-specific definition of aggressive youth groups resulting in discrepancies in samples from study to study, and (2) lack of consistency in selection of a self-concept instrument from study to study, again making comparisons difficult.

These two factors have contributed to the contrary findings in this area of research and therefore need to be considered in future work. The present paper advocates the selection of a stable self-concept measure and the adaptation of more precise population descriptors. To this end, a classification scheme to specifically define youth aggression is proposed.

REFERENCES

Brodia, D., Izard, C., and Cruickshank, W. "Thematic Apperception Reactions of Crippled Children." *Journal of Clinical Psychology*, 1950, *6*, pp. 243, 248.

Campbell, M., Hayden, P., and Davenport, S. "Psychological Adjustment of Adolescents with Myelodysplasia." *Journal of Youth and Adolescence*, 1977, *6*, (4), pp. 397–407.

Combs, A. W. *Perceptual Psychology: A Humanistic Approach to the Study of Persons*. New York: Harper and Row, 1976.

Cox, R., Moore, J., and Hauck, W. "Stability of Self-Concept, Significant Others and Socio-Economic Level." Unpublished study available from ERIC, Ed. pp. 127–404, 1974.

Fitts, W. *Tennessee Self-Concept Scale*. (Manual) Nashville, Tennessee: Counselor Recording and Tests, 1965.

Hamner, W. T., and Fitts, W. *The Self-Concept of Delinquents*. Nashville, Tennessee: Mental Health Center Research Bulletin, 1969.

Lecky, P. *Self-Consistency: A Theory of Personality*. New York: Island Press, 1945.

Lutkemeier, D. M. "Self-Concept change among Adolescents with Myelomeningocele in response to a summer camp experience." Unpublished doctoral dissertation, University of Cincinnati, 1979.

Mead, J. H. *Mind, Self, and Society*. Chicago: University of Chicago Press, 1934.

Rogers, C. *Counseling and Psychotherapy: Theory and Practice*. New York: Harper and Row., 1959.

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Trends in Definitions for Emotionally Handicapped and/or Learning Disabled Adolescents

Don Wells, Laura Stoller, Rex Schmid, and Bob Algozzine

ABSTRACT

The National Secondary School Survey (NSSS), was designed to determine the state-of-the-art of secondary public-school programs for emotionally handicapped and learning disabled adolescents. One objective of the project was to analyze current definitions used for the two populations, the results of which are reported in this article. Each state's definition was broken down into individual components and compared with previous research in the area. Additionally, each definition is compared with those suggested in PL 94-142, *and definitional trends are reported.*

INTRODUCTION

Given the mandates established by educational legislation and litigation a free and appropriate public education is guaranteed to all handicapped children (including the adolescent). Despite such legislation, it is thought that few secondary school programs offer service to the emotionally handicapped (EH) learning disabled (LD) adolescent. Bullock and Brown (1972), for example, in surveying 126 public and private educational programs in 16 Florida counties reported 60 percent were serving EH/LD children but of these only 15 percent served adolescents. Scranton and Downs (1975) and Goodman and Mann (1975) also found a large proportion of national educational services concentrated at the elementary level.

The National Secondary School Survey (NSSS) was designed to determine the "state-of-the-art" of secondary public school programs for EH and LD adolescents. The primary objectives of the project were to collect and disseminate data examining: (A) variation in definitions of EH/LD adolescents; (B) program variations in the education of EH/LD adolescents; and (C) predicted problems in the education of EH/LD adolescents.

METHODOLOGY

In the first phase of the NSSS project a personal telephone call was placed to each state department director describing the project, asking for cooper-

ation, and advising that a letter would follow requesting: (A) a listing of school district directors of special education (or comparable position); and (B) a copy of each state's definition of EH and LD. The district directors of special education were contacted by letter in the second phase of the project and asked to provide the name of a contact person in each secondary public school having a program for EH and/or LD adolescents.

Every school district director or school district identified was contacted rather than drawing a sample. There were two reasons for this: (A) only the district director is in a position to have *current* first-hand knowledge of specific high school programs; and (B) the estimated incidence of high school programs is low (9-15 percent) and a sampling procedure at this step would reduce the chances of obtaining an acceptable percentage of survey returns. A return rate of 40 percent was set and attained for Phase II of the project.

The NSSS project is currently in Phase III. In this phase each contact person has been asked to complete the NSSS survey instrument. A return rate of 40 percent has been set for this phase and the estimated total number of returns is 2,000.

In order to strengthen the validity of the survey procedures, thirty high school programs returning the survey instrument will be selected for site visitation in 1980. This is a procedure similar to that used by Morse, Cutler, and Fink (1964) to examine selected programs in depth and compare staff members perceptions with those reported in the survey instrument.

The findings reported in this paper relate primarily to variations in definitions of EH/LD adolescents. Information and data related to other NSSS objectives will be reported in subsequent papers and monographs and may be obtained by writing to the authors.

RESULTS

Definitions were obtained for learning disabilities (see *Table 1*) and emotional disturbance (see *Table 2*) from all 50 states. The District of Columbia was arbitrarily excluded from the data collection. Although requests for definitions specifically asked for those used with adolescents in secondary school programs, there were no definitions that differentiated between adolescence and childhood. One state, Massachusetts, used noncategorical definitions and was excluded from the analysis.

Learning disabilities

Two analyses of the learning disability definitions were completed: (A) the total number of definition components included (based on the 24 possible components identified by Mercer, Forgnone, and Wolking, 1976) and the number of those that matched the components in the *PL 94-142* definition (component total = 15), and (B) based on the report of Mercer *et al.*, the number of component changes to or from those of *PL 94-142*. The number of states including each definition component are indicated in *Table 3*.

The greatest number of changes occurred for the components of intelli-

gence (15 states deleted an intelligence specification); language process

(five states added a specification); academics (seven states added a reading specification, eight added writing, seven added spelling, eight added math), and primary exclusion specifications (14 states added visual, 14 added auditory, 14 added motor, 18 added retardation, nine added emotional handicaps, 17 added environmental disabilities). In general, the data indicated an increase in the match between the components of state definitions and those of *PL 94-142*.

Emotional disturbance

Two analyses of the emotional disturbance definitions were also conducted: (A) the total number of definition components included (based on the 11 possible components identified by Epstein, Cullinan, and Sabatino, 1977) and the number of those that matched the components in the *PL 94-142* definition (component total = 7), and (B) based on the report of Epstein, *et al.*, the number of component changes to or from those of *PL 94-142*. The number of states including each ED definition component are indicated in *Table 4*.

The greatest number of changes occurred for the components of learning and achievement problems (11 states added the component); chronicity (15 states added the component); severity (13 states added the component); and need for special education (11 states deleted the component). In general, the data indicated an increase in the match between the components of state definitions and those of *PL 94-142*.

State definitions and state guideline components

The components of state department guidelines for placement of a learning disabled student were compared with the state definition components for 35 states (see *Table 5*). The average number of agreements between the guidelines and definition components was nine (Range = 0-17) and the average number of disagreements (*i.e.*, a component was listed in one but not the other) was seven (Range = 0-16). Eight states required the local education agency to submit a plan for approval rather than specify state guidelines.

A similar comparison was used for emotional disturbance (N = 28 states). The average number of agreements between the guidelines and definition components was 2.5 (Range = 0-6) and the average number of disagreements was four (Range = 0-8). Nine states required the local education agency to submit a plan for approval rather than specify state guidelines.

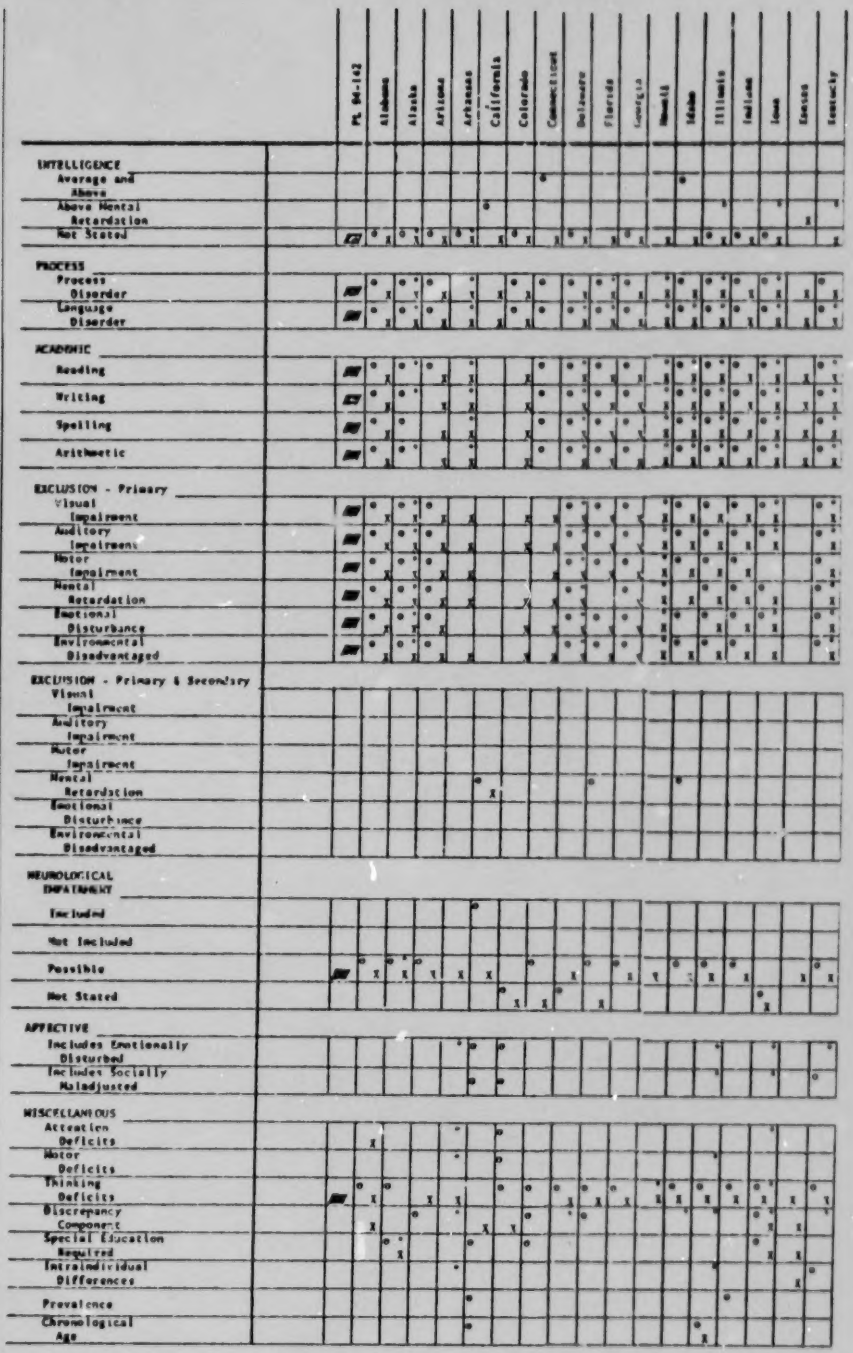
DISCUSSION

In reviewing the data presented in the results section the reader is cautioned to consider the subjectivity inherent in the analysis. Even though a multiple reviewer, interscorer agreement procedure similar to that of Epstein, Cullinan, and Sabatino (1976) was used, other reviewers may disagree with some of the data assignments.

In spite of the caution above, several things seem evident from the data. First, the importance of developing standard definitions cannot be underestimated. Even though many factors make consensually acceptable defini-

TABLE 1

LD Definitions



o = Mercer et al.

X = MSSS

* = MSSS review of guidelines

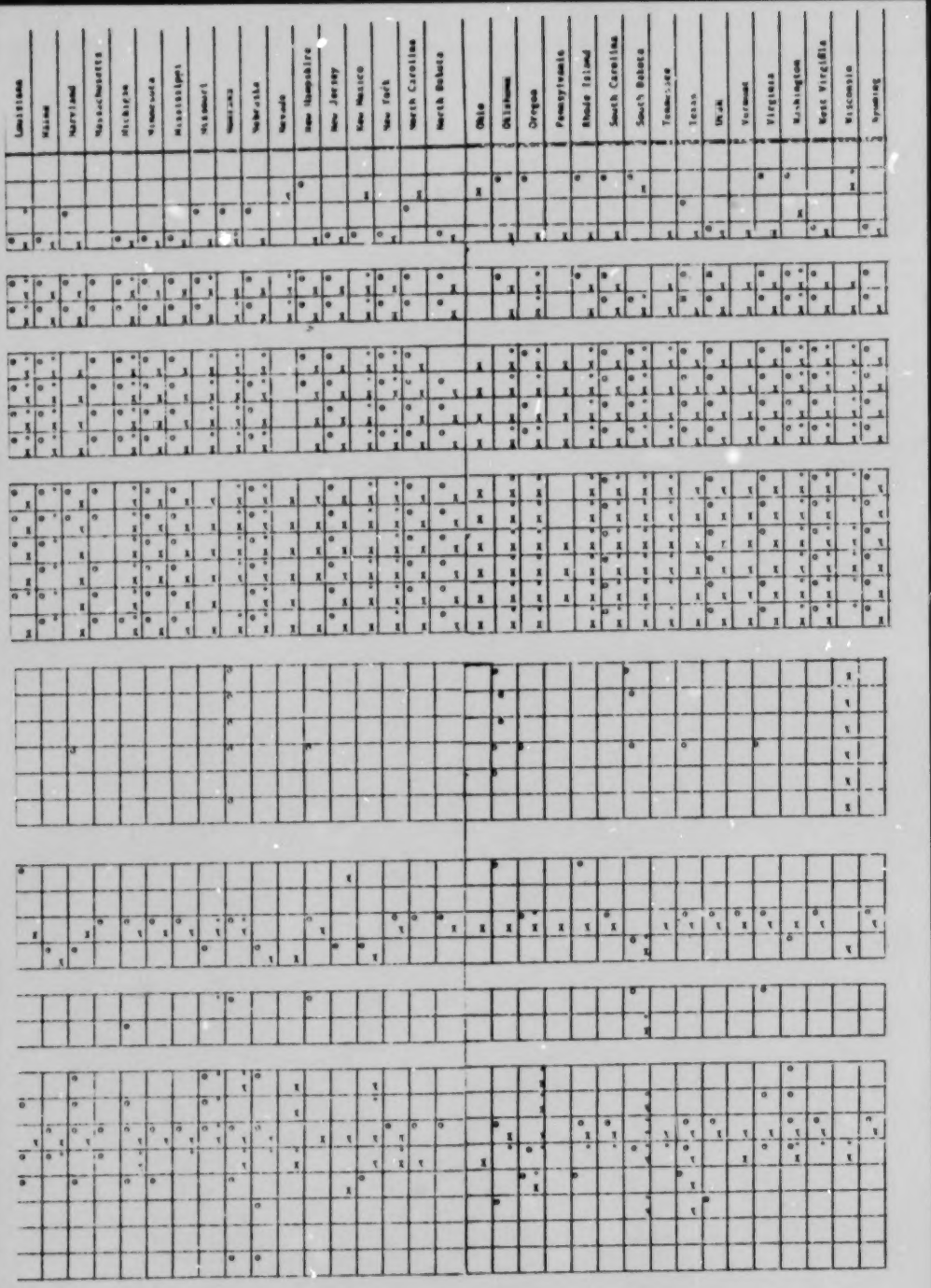


TABLE 2

ED Definitions

	Disorders of Emotional/Behavior	Interpersonal Problems	Learning/Achievement Problems	Isolation from Norm	Chronicity	Severity	Etiology	Prognosis	Exclusions	Special Education Needed	Certification
Alabama	•	•	•	•	•	•			•		
	E	E	E	E	E	E			E		
Alaska	•	•	•								•
	E	E	E			E				E	
Arizona	•									•	•
	E	E		E						E	E
Arkansas	•		•	•	•	•				•	
	E	E	E	E	E	E			E	E	
California	•		•	•	•	•		•	•		•
	E		E	E	E	E		E	E	E	E
Colorado	•	•	•	•	•	•				•	
	E	E	E	E	E	E				E	
Connecticut	•	•	•				•	•		•	
	E	E	E				E	E		E	
Delaware	•									•	•
	E	E	E		E	E	E				E
Florida	•	•		•	•					•	
	E	E	E		E	E			E		
Georgia	•	•							•		
	E		E	E	E	E			E		
Hawaii	•	•	•	•	•	•	•		•	•	•
	E		E	E		E			E		E
Idaho	•	•							•	•	
	E	E	E	E	E	E			E	E	
Illinois	•	•								•	
	E									E	E
Indiana	•	•	•	•	•	•			•	•	•
	E	E	E	E	E	E			E		
Iowa	•	•	•	•	•	•				•	
	E	E	E	E	E	E					
Kansas	•	•	•	•	•	•					
	E	E			E	E				E	
Kentucky	•	•	•	•	•	•				•	
	E									E	
Louisiana[1]	•	•	•	•	•	•			•		•
	E	E	E	E	E	E			E		
Maine	•	•	•	•	•	•				•	
	E	E	E	E	E	E				E	
Maryland	•			•			•				•
	E	E	E	E	E	E			E		
Massachusetts[2]											
Michigan	•	•	•		•					•	•
	E	E	E	E	E					E	E
Minnesota	•	•	•	•	•	•			•		
	E	E	E	E	E	E			E		
Mississippi	•	•		•	•					•	•
	E	E		E	E					E	
Missouri	•	•	•	•		•	•		•		•
	E	E	E		E	E			E		
Montana	•	•	•	•	•	•			•	•	•
	E	E	E	E	E	E			E	E	E
Nebraska	•	•	•	•			•				
	E	E	E	E			E				
Nevada	•				•					•	•
	E				E					E	E
New Hampshire	•		•				•	•	•	•	•
	E	E	E	E	E	E			E		
New Jersey	•	•	•	•	•			•	•	•	•
	E	E	E	E	E				E		
New Mexico	•	•	•	•	•	•			•		
	E	E	E	E	E	E					
New York	•						•			•	•
	E										
North Carolina	•	•	•	•	•	•			•		
	E	E	E	E	E	E			E		
North Dakota	•			•	•	•	•			•	
	E					E	E			E	
Ohio	•		•	•					•		•
	E								E		E
Oklahoma	•	•		•	•			•		•	
	E	E		E	E		E			E	
Oregon	•	•	•	•	•	•	•	•		•	•
	E	E	E	E	E	E	E				
Pennsylvania	•	•		•				•		•	
	E	E	E		E					E	
Rhode Island	•	•				•				•	•
	E	E	E	E	E	E			E		
South Carolina	•	•		•	•				•	•	
	E									E	
South Dakota	•	•	•	•	•	•			•	•	•
	E	E	E	E	E	E			E		
Tennessee	•	•	•	•							•
		E		E		E	E		E		
Texas	•										
	E	E	E	E	E	E	E		E		E
Utah	•									•	•
	E	E				E				E	
Vermont	•		•	•			•			•	•
	E	E	E	E	E	E	E		E		
Virginia	•	•							•		
	E	E	E	E	E	E	E		E		
Washington	•					•					
	E	E		E		E					
West Virginia	•	•	•						•		
	E	E	E	E	E	E	E		E		E
Wisconsin	•	•	•	•	•	•	•				
	E	E	E	E	E	E	E			E	E
Wyoming	•	•	•	•	•	•	•		•		
	E	E	E	E	E	E	E		E		

[1]Definition was under development when Epstine et al. collected data.

[2]Massachusetts uses a noncategorical approach to exceptionality.

• = Epstein et al.

E = NASE

TABLE 3

Comparison of Mercer, et al., and NSSS Findings for State LD Definition Components

Component	**Frequency		
	Mercer, et al.	NSSS	Change
INTELLIGENCE			
Average and above	11	3	−8
Above mental retardation	8	1	−7
*Not stated	22	37	+15
PROCESS			
*Process disorder	35	36	+1
*Language disorder	34	39	+5
ACADEMIC			
*Reading	30	37	+7
*Writing	30	38	+8
*Spelling	30	37	+7
*Arithmetic	30	38	+8
EXCLUSION—Primary			
*Visual Impairment	25	39	+14
*Auditory impairment	25	39	+14
*Motor impairment	23	37	+14
*Mental retardation	20	38	+18
*Emotional disturbance	24	33	+9
*Environmental disadvantaged	22	39	+17
EXCLUSION—Primary & Secondary			
Visual impairment	3	0	−3
Auditory impairment	3	0	−3
Motor impairment	2	0	−2
Mental retardation	11	1	−10
Emotional disturbance	1	0	−1
Environmental disadvantaged	1	0	−1
NEUROLOGICAL IMPAIRMENT			
Included	4	1	−3
Not included	0	0	0
*Possible	25	31	+6
Not stated	11	9	−2
AFFECTIVE			
Includes emotionally disturbed	6	0	−6
Includes socially maladjusted	4	1	−3
MISCELLANEOUS			
Attention deficits	5	4	−1
Motor deficits	7	2	−5
*Thinking deficits	30	35	+5
Discrepancy component	11	12	+1
Special education required	14	5	−9
Intraindividual differences	4	2	−2
Prevalence	2	0	−2
Chronological age	4	1	−3

* Components present in the *PL 94-142* definition.

** Because Massachusetts changed its definition to "non-categorical" it was eliminated for purposes of comparison as were the states not included in the original Mercer, et al. tables.

TABLE 4

Comparison of Epstein, et al., and NSSS Findings for State EH Definition Components

Component	**Frequency		
	Epstein	NSSS	Change
*Disorders of emotion/behavior	48	48	0
*Interpersonal problems	34	34	0
*Learning/achievement problems	26	37	+11
*Deviation from norm	24	29	+5
*Chronicity	18	33	+15
*Severity	20	33	+13
Etiology	8	5	−3
Prognosis	4	2	−2
*Exclusions	16	24	+8
Special education needed	30	19	−11
Certification	17	12	−5

* Components present in the *PL 94-142* definition.

** Because NSSS did not collect data from Washington, D.C., the Epstein, *et al.*, N was corrected to 48 by eliminating this data.

tions difficult—competing theoretical models; variation in professional training, range of situations, and assessment difficulties—they influence prevalence estimates, types and characteristics of services; and pupil eligibility. The purpose of this report was to update information on state definitions for learning disabilities and emotional disturbance, to ascertain the existence of trends toward standardization of definitions, and to determine indications of congruence between the definitions and state placement guidelines.

The reports of two different groups of investigators were used to establish baselines from which to determine change, *i.e.*, Epstein, Cullinan, and Sabatino (1976) for emotional disturbance, and Mercer, Forgnone, and Wolking (1976) for learning disabilities. The analysis format used by these investigators was used for the analysis of the data collected in the NSSS project.

The current data are presented in *Tables 1* through *5* and changes from the two earlier investigators are compared. There does appear to be a trend for states to move toward standardizing their definitions of learning disabilities and emotional disturbance around the definitional components listed in *PL 94-142*. It remains to be seen if complete standardization will occur.

The comparison of state definitions and state placement criteria, however, indicated less congruence than one might expect. For example, in some states the definition of learning disability does not mention an intelligence criteria, yet the placement guidelines specifically state a criteria level. It may be that in practice stated definitions are standardizing around *PL 94-142* but the more important criteria for determining who actually receives service,

TABLE 5

Agreement Between Definition and State Guideline Components for Placement

State	Number of Agreements		Number of Differences		Not specified or Left to the LEA	
	LD	ED	LD	ED	LD	ED
Alaska	11	4	3	3		
Arkansas	7	6	12	2		
Connecticut					X	X
Delaware	10		5			X
Florida	11		4			
Hawaii	13	6	3	4		
Idaho	5	1	11	3		
Illinois	12		6			X
Indiana		1		6	X	
Iowa	11	3	8	3		
Kentucky	10	1	7	4		
Louisiana	12	6	3	2		
Maine	4	•	12	•		
Maryland					X	X
Michigan	11	1	4	6		
Mississippi	0	1	16	5		
Missouri	6	2	12	5		
Montana					X	X
Nebraska	9	•	7	•		
Nevada	3	0	10	4		
New Hampshire	•	0	•	8		
New Jersey					X	X

TABLE 5 (*Continued*)

New Mexico	10	*	7	*		
New York	10	*	5	*		
Ohio					X	X
Oklahoma	9	*	7	*		
Oregon	15	5	4	3		
Rhode Island	9	*	7	*		
South Carolina	6	1	10	4		
South Dakota	17	*	1	*		
Tennessee	8	2	8	5		
Virginia					X	X
Washington	12	0	4	5		
West Virginia	9	*	7	*		
Wisconsin	6	6	9	2		
Wyoming					X	X
	Total = 246	Total = 46	Total = 194	Total = 74	Total = 8	Total = 9
	Range = 0-17	Range = 0-6	Range = 0-16	Range = 0-8		
	n = 27	n = 18	n = 27	n = 18		
	x = 9.1	x = 2.5	x = 7.1	x = 4.0		

* Data not available.

N = 35 LD
28 ED

i.e., state guidelines, still vary significantly. A complete comparison of state guidelines and definitions is now being conducted by the NSSS project staff.

REFERENCES

Bullock, L. J. and Brown, R. K. *Research bulletin: Educational provisions for emotionally disturbed children: A status report.* Florida Educational Research and Development Council, 1972, *8*, 1.

Epstein, M. H., Cullinan, D., and Sabatino, D. A. State definitions of behavior disorders. *The Journal of Special Education*, 1977, *11*, pp. 417-425.

Goodman, L. and Mann, L. *Learning disabilities in the secondary school: Issues and practices.* New York: Grune and Stratton, 1976.

Mercer, C. D., Forgnone, C., and Wolking, W. D. Definitions of learning disabilities used in the United States. *Journal of Learning Disabilities*, 1976, *9*, pp. 376-386.

Scranton, T. R. and Downs, M. L. Elementary and secondary learning disability programs in the U.S.: A survey. *Journal of Learning Disabilities*, 1975, *8*, pp. 61-66.

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The Least Restrictive Environment for Adolescents with Severe Behaviors: Putting the Pieces Together

Eleanor Guetzloe

INTRODUCTION

Adolescents with severe behavior disorders have traditionally presented a major problem to educators of exceptional children. For many years the emphasis in exceptional student education has been placed on programs for the elementary school level, while the area of secondary education has been comparatively neglected. Because the secondary school has generally tolerated very little deviant behavior, the problem adolescent has usually been simply excluded.

As a result of recent federal mandates, there is considerable professional interest in the problem of the behaviorally disordered adolescent. Exclusion is no longer even debatable. The law requires that a continuum of educational placements will be made available, that the student will be educated in the least restrictive environment, and that the handicapped child will participate with nonhandicapped children to the maximum extent possible in extracurricular and nonacademic activities. The implementation of these regulations places a great deal of the responsibility for the education of handicapped children upon regular educators, few of whom feel competent to assume the burden. An additional problem is presented by the fact that the student with a severe behavior disorder, especially at the secondary school level, is considered by many educators to be the most difficult of all handicapped children to integrate with normal peers.

In establishing educational programs for adolescents with behavior disorders, the usual direction within exceptional student education has been toward the formation of special schools and self-contained classes which have afforded very little, if any, interaction with normal peers. The issue confronting educators of behaviorally disordered youth is not to debate the advantages or disadvantages of segregated placement but rather to establish an appropriate program which meets the requirements of the federal mandate. There must be available to the students with behavioral disorders a full continuum of alternative educational placements, ranging from regular classrooms to hospitals and residential institutions.

It should be noted that providing the least restrictive environment does not necessarily require integration with normal peers. Mainstreaming is not the mandate. Placement, according to the law, must be made on an individual basis. Selection of the least restrictive environment for any handicapped child must be based upon the individualized education program and may lead to placement in a setting on any point on the continuum. Inclusion in the regular classroom is not appropriate for all students with behavior disorders. There are students who cannot benefit from such placement and for these segregated classrooms must be provided. The rules and regulations state that if a child is so disruptive in a regular classroom that the education of other students is significantly impaired such placement is inappropriate (*Federal Register*, 1977). Further, the mere establishment of a class for behaviorally disordered students on the grounds, or within the building, of a regular secondary school constitutes neither mainstreaming nor the least restrictive environment. Those persons who make decisions concerning the placement of students with behavioral disorders must exercise a great deal of caution in determining the least restrictive environment. In some instances, the federal law may be used as an excuse for providing a lesser program. It may be merely expedient both logistically and financially to place all handicapped children of appropriate chronological age in the regular secondary school. The failure of the educational mainstream to deal effectively with the delinquent or disturbed adolescent has been reflected in national statistics on school dropouts (Kauffman and Nelson, 1976). The regular secondary school has been traditionally oriented toward content rather than academic skills or processes and there has been very little support, environmental control, or individualization for the deviant youngster. Public Law *PL 94-142* requires that consideration be given, in the selection of the least restrictive environment, to any potentially harmful effect on the student. Placement closer to the mainstream may not be made if such placement would be detrimental to the child's educational program. It is, therefore, reasonable to assume that the specialized support services needed by the student with behavioral disorders such as counseling, group therapy, academic remediation, and vocational education will be made available within the context of the regular school.

On the subject of mainstreaming, Mercer (1974) has suggested that the *why* is to be understood in the perspective of history, the *who* is in large part a decision of the courts, but the *how* is the current challenge of public education. It is this author's contention that educators of exceptional children already know *how*. The problem in providing the least restrictive environment is *where* and, of even greater significance, *with whom*. The success of any educational program depends upon the knowledge, skills, and personality of the adult in charge. It is still what's up front that counts. The responsibility for the successful implementation of programs in the mainstream rests upon those who already have the necessary qualifications. Exceptional student education must assume this responsibility.

A review of the current literature reveals a relative paucity of information concerning secondary education for children with severe behavioral disorders. Further, most of the programs reported have operated in a segregated setting. There are, however, certain components or elements which are common to many of the projects cited as effective. With some degree of

modification, these components can be implemented in the regular secondary school.

BEHAVIOR MANAGEMENT SYSTEMS IN THE SECONDARY SCHOOL

Perhaps the single most critical factor contributing to the success of the program for students with behavior disorders in the regular secondary school is the planning and implementation of an appropriate system of behavior management. The efficacy of the behavioral approach in the education and training of students with severe behavioral disorders has been adequately demonstrated in self-contained classes, special schools, and institutions for many years (Cullinan, 1978; O'Leary and O'Leary, 1977; Shea, 1978; Swanson and Reinert, 1979). The programs cited, however, have generally operated in settings in which there could be a great deal of control exercised over the learning environment. In a less restrictive placement, it may be very difficult to devise a system which will provide for a consistent approach to dealing with the student's behavior in any setting within the school.

Several relatively simple behavioral techniques seem particularly suitable for use in a regular secondary school. These include: (A) a token economy; (B) behavioral contracting; and (C) reinforced modeling.

The token economy

The token reinforcement system is among the most commonly used behavior management systems in programs for the severely disturbed or delinquent youth and its effectiveness has been demonstrated in a variety of educational settings (Cullinan, 1978; Hobbs and Holt, 1976; O'Leary and Drabman, 1971; Phillips, Phillips, Fixsen, and Wolf, 1971).

In utilizing a token reinforcement system in a regular secondary school, it is essential that the procedures used be kept as simple as possible and that the total faculty be aware of, and receive training in, the techniques involved. The implementation of such a system requires the participation, cooperation, and commitment of all personnel involved, including, as suggested by Graubard (1976), even the students themselves.

An example of such commitment by a total school community has been reported by Davis (1979) and Jury and Jury (1979). An entire middle school in Gilman, Vermont, has adopted a token economy. The tokens, called *thalers*, resemble *Monopoly* money and are worth one penny each, backed by appropriations from the school board, community donations and money raised by the students themselves. The system was developed by a former principal, Barry Grove, Superintendent of the Jacksonville, Vermont School District, in an effort to teach economics, capitalism, and private enterprise while combating student apathy, vandalism, and discipline problems. The result is an intricate social, legal, and economic system, including a Bill of Rights and Code of Laws adopted by the student body. Students hold jobs, pay taxes, and enforce their own rules. Both adults and students involved attest to the success of the system (Jury and Jury, 1979).

Behavioral contracting

Behavioral contracting has been cited as a successful intervention in community, public school, home-based and institutional programs for behaviorally disordered adolescents (Cullinan, 1978; Jesness and DeRisi, 1973; Stuart, 1971; Stuart and Lott, 1972). Rules and guidelines for the implementation of behavioral contracting have been outlined by a number of authors (Homme, Csanyi, Gonzales, and Rechs, 1969; Shea, 1978) and examples of behavioral contracts suitable for use with adolescents have been described by Cullinan (1978), Shea (1978), and Rutherford and Edgar (1979). Using behavioral contracts with disturbed adolescents requires no procedural changes, but parent participation in the agreement might enhance the possibilities of success. Initial contracts could therefore be written during the meeting held for the purpose of developing the individualized education program, since all interested parties, including the student, should be present.

Reinforced modeling

Reinforced modeling (Alexander and Parsons, 1973; Bandura, 1973), has been successfully employed as an intervention technique with a number of patterns of maladjustment such as rejection of authority, inability to resist peer pressure, unwillingness to accept blame, failure to complete tasks, inability to express assertion without anger, inability to ask for assistance, and inability to accept criticism (Cullinan, 1978). The four separate components of the reinforced modeling technique are as follows:

1. The specific behavioral skills required for successful performance are determined and stated explicitly by the trainer;

2. The skills are demonstrated by live models, film, or videotape and a rationale for each is explained;

3. The student participates in guided practice under safe conditions with reinforcement of successive approximations; and

4. The skills are practiced, corrected, and repracticed, with approval or other reinforcement for correct performance, in more realistic situations.

It is possible to utilize this technique in a regular secondary school by first demonstrating and then arranging practice sessions in the special education setting. The skills could then be practiced and reinforced by other school personnel in both regular classrooms and other settings throughout the school.

Communication as intervention

In addition to the implementation of a token economy and other classroom management systems it is necessary to plan with the entire staff for a method of communicating with the disturbed student. This plan should ensure that the response to any problem behavior will be essentially the same from any adult with whom the student comes into contact outside the classroom. It is important that traditional secondary school punishment be avoided if at all possible.

Secondary school personnel involved with mainstreaming emotionally disturbed students have questioned, "What do we do when they act up in the hall?" "What should we do if the child is involved in a disturbance and refuses to go to the dean?" A dean has asked, "Isn't there something else to do besides sending him to me?" A simple technique, easily mastered by the entire school faculty has proved effective in such situations. If the student is involved in a dispute away from the special education classroom, he is simply asked to return to the special teacher: "Are you Mr. Hall's student?" "Please go to Mr. Hall's room now." Normally, the student will consider his classroom a haven and will return readily to his special teacher. If, upon entering the room, he responds appropriately to directions, and returns to task, no further action is necessary. If he continues to be disruptive and/or refuses to follow directions, the options of time out or seclusion in the dean's office must be available to the special class teacher. If the student is told to return from a general education classroom, his assignment should be sent with him. Problems arising in the halls or on the grounds should be simply and quickly settled as described in order to provide the least possible disruption of the student's schedule.

Although, as suggested by Cullinan (1978), behavior modification procedures alone can bring about changes in deviant behavior, intervention programs may often use behavioral techniques in combination with other approaches. Another strategy, with which behavioral procedures can be made compatible, is that of therapeutic group discussion.

Group-oriented interventions

In the traditional secondary school, very little opportunity is provided for students to engage in supervised experiances in communication. While most adolescents have acquired some skills in establishing interpersonal relationships with peers, the seriously disturbed child generally exhibits an inability to perform appropriately in social situations and needs structured practice in this area. There is also some evidence that the influence of the special class group may adversely affect classroom behavior (Graubard, 1976). This author contends that the peer group must consciously legitimize learning so that members of the group may participate in classroom activities without fear of loss of status. He cites the need to be aware of the power of the group and to negotiate its support for the system of classroom rewards.

The effectiveness of therapeutic group as an intervention strategy with behaviorally disordered students has been cited by a number of authors (Anderson and Marrone, 1979; Berkowitz, 1972; Copeland, 1974; Gossett and Lewis, 1972). Copeland (1974), in discussing group psychotherapy for adolescents, suggests that the formation of peer groups for therapeutic purposes can be very effective. He stresses, however, the need for experience and skill on the part of the leaders or co-leaders. He further suggests the addition of a sufficient number of co-therapists to keep the group moving in the right direction, especially if there are more than eight in the group or if members of the group show antisocial tendencies.

Classroom group meetings

110 Group meetings as part of the normal classroom procedure have been sug-

gested by several authors (Glasser, 1971; Vogel and Smith, 1974). According to Glasser (1971), there are three types of classroom meetings:

1. Open-ended meetings for the purpose of increasing thinking skills and encouraging students to relate what they know to a topic.

2. Educational-diagnostic meetings, which are related to the unit the class is studying for the purpose of evaluation of instruction.

3. Problem-solving meetings for the purpose of solving the problems of school living.

Vogel and Smith (1974) have suggested three kinds of group meetings for the classroom:

1. The open meeting, called by any member of the group for the purpose of expressing frustration and which is usually conducted by a peer.

2. The problem-solving meeting.

3. The decision-making meeting.

Certain additions to the curriculum could be utilized as reverse mainstreaming strategies, in that normal students could be allowed to enroll in these courses as electives. Such special topics courses could include study skills, communication skills, sex education, use of leisure time, personal health (including diet and medication), drug education, and environmental education. It would also be possible to have content specialists from regular education teach an adapted general education class in a segregated setting, or to have the special class or resource teacher provide a course for normal students in which the behaviorally disordered youngsters could be placed.

Meeting special needs

The placement of a behaviorally disordered student in the general classroom for any academic subject implies that the student will be able to succeed in that setting, achieving a passing grade. It is to be expected, however, that some adjustment of requirements must be made in order to meet the needs of the handicapped student. Among the accommodations that can be made by the regular classroom teacher in cooperation with the special education teacher are the following, as suggested for adolescents with learning disabilities (Marsh, Gearheart, and Gearheart, 1978):

1. Selection of special textbooks and instructional materials.

2. Provision of course objectives and requirements, together with a schedule of when assignments are due.

3. Continuous monitoring of the student's progress.

4. Provision of a glossary of technical terms.

5. Provision of taped or written summaries of abstract concepts.

6. Modification of homework or testing requirement.

The special class or resource teacher, in return, should assume the responsibility for the teaching of study skills the student may need in order to succeed in the regular classroom. Such skills may include:

1. Planning an appropriate environment for studying.

2. Notetaking and using a tape recorder.
3. Keeping a record of assignments.
4. Finding main concepts and facts.
5. Taking tests.
6. Using reference materials.
7. Changing reading rate according to purpose and material.

Career education, vocational education, and vocational rehabilitation

Educators of exceptional students have long recognized the advantages of combining meaningful vocational experience with formal education. Career and vocational education have been suggested as essential components of educational programs for the behaviorally disordered student (Kauffman and Nelson, 1976; Northcutt and Tipton, 1978), as having the potential for accommodating handicapped students in the mainstream (Brolin and Alonso, 1979), and as an alternative to the traditional secondary curriculum (Brolin, 1976; Colella, 1973; McDowell and Brown, 1978).

A recent review of federal legislation affecting vocational education and future employment of handicapped students (Razeghi and Davis, 1979) emphasizes the intent of the mandates that these opportunities should be made available and accessible. As reported by these authors, an interbureau agreement has been developed jointly by the Bureau of Education for the Handicapped and the Bureau of Occupational and Adult Education which provides for coordinating the activities of the two bureaus in areas of shared responsibility. Further, the Office of Education has entered into an agreement with the Rehabilitation Services Administration to plan and implement cooperative efforts in providing services to handicapped students. The authors caution, however, that special educators may need to provide the initiative in implementing these cooperative efforts, especially at the local level.

Vocational education as an alternative program

McDowell and Brown (1978) have proposed a career and vocational program for emotionally handicapped adolescents as an alternative to the traditional college preparatory curriculum. The program would be housed in a minimum of three classrooms within the regular secondary school plant in order to facilitate integration of the special students into the regular school program whenever possible. Completion of the program would result in both graduation and a regular high school diploma.

A vocational program for severely disturbed adolescents which serves as an alternative to institutional placement has been developed by Black and Black (1979). The program is made available through cooperation between the New York City Board of Education, the Bronx Children's Psychiatric Center, the Rehabilitation Center (of the adult mental hospital), and the New York State Office of Vocational Rehabilitation. Two vocational classrooms are supplied by the Division of Special Education and the Office of Career and Occupational Education, one of which offers basic clerical skills

while the other offers horticulture and ground maintenance. Part time work experience is made available through the Office of Vocational Rehabilitation. The authors recommend a highly structured setting with no more than ten students in a group. They contend that the severely disturbed adolescent requires a therapeutic milieu with behavioral support and controls in the vocational education setting.

The Pinellas Marine Institute is a highly successful vocationally oriented educational program for adjudicated youth in St. Petersburg Beach, Florida. The program is made available through cooperation between the Pinellas County Public Schools, the Office of Youth Services, and a private corporation, the Associated Marine Institute. An outstanding feature of the vocational education program is that the vocational training is toward marine-related occupations that are highly desirable, and socially acceptable. There are courses in basic engines, welding, dock building, seamanship, boat handling, power boats, instruments, communication, scuba diving, dive shop operation, safety, marine science, ocean science, and underwater photography. The students may also earn a high school equivalency diploma. The program itself is highly structured and based upon a token economy.

Modifications in the vocational education program

There are a number of problems that may emerge in providing vocational education and work experience for the severely disturbed adolescent. The vocational plans and choices of the adolescent with a severe behavior disorder may often be somewhat unrealistic. Parents and teachers must cooperate in sharing accurate information concerning the student's actual potential as well as his preferences for a possible future vocation.

Vocational skills may often be taught in isolation, in the form of work samples. The disturbed student may, for example, learn how to write a charge with a credit card. He may learn to work the machine, fill in the blanks correctly, add the bill, and check to see that the signature is correct. These activities, however, are carried out within the comfortable and familiar confines of his classroom. On the job, however, these routines must be performed while customers are clamoring for assistance and someone has borrowed his ballpoint pen. The disturbed student needs intensive practice in work settings which more closely approximate the real world. He needs practice in managing frustration.

Often, the behaviorally disordered student, after a brief period of work evaluation, has been placed on the job in an unfamiliar environment, with co-workers he does not know, with a supervisor that he does not trust, and with infrequent visitations by whatever liaison person is available. The student is expected to model after his co-workers, respond appropriately to his supervisor, and become comfortable in the new environment while learning the skills required for the job itself. The change is too abrupt for the emotionally disturbed student. He actually needs over-training. After the skills are thoroughly ingrained, the tasks themselves might contribute to his emotional comfort, acting as a crutch in an unfamiliar setting. There should also be gradual, sequential steps from the extremely structured classroom to the actual job placement.

A sequence of such placements might include:

1. School-based group work experiences, such as shop, landscaping, kitchen and lunchroom work, with token pay;

2. Paid group work experiences, under supervision, perhaps including socially relevant occupations related to helping others; and

3. A continuum or hierarchy of placements for part time work, well-supervised, structured for gradual increase in social demands, and limited in terms of length of time on the job.

At the present time, vocational education and training may often be offered as part of the special education program. It should be possible to establish special classes and resource rooms within the vocational schools and institutes, from which youngsters could be "mainstreamed" to whatever extent possible, which engaging in vocationally oriented activities in the special classes.

There should also be established, within the framework of vocational education, a sheltered workshop for those who cannot be successfully mainstreamed, in which the management techniques would more closely approximate those that are employed successfully in special classrooms.

SUMMARY

In considering the components reported as successful in educational programs for students with severe behavioral disorders, it becomes obvious that the factors of greatest importance are not the physical plant, the instructional supplies, or the academic courses. Crucial to the success of such a program are the skills and attitude of the faculty and administrative staff, factors which have not been covered in this discussion. Assuming the presence of qualified and concerned personnel to carry out the necessary tasks, the implementation of the components discussed above should prove to be successful in the regular secondary school.

REFERENCES

Alexander, J. and Parsons, B. Short-term behavioral intervention with delinquent families: Impact on family process and recidivism. *Journal of Abnormal Psychology*, 1973, *81*, pp. 219-226.

Anderson, N. and Marrone, R. T. Therapeutic discussion groups in public school classes for emotionally disturbed children. *Focus on Exceptional Children*, 1979, *12*(1), pp. 1-15.

Bandura, A. *Aggression: A social learning analysis*. Englewood Cliffs, New Jersey: Prentice-Hall, 1973.

Berkowitz, I. *Adolescents grow in groups*. New York: Brunner-Mazel, 1972.

Black, A. and Black, B. The mentally ill adolescent special education-career education. *Behavioral Disorders*, 1979, *4*(3), pp. 193-195.

Brolin, D. and D'Alonso, B. Critical issues in career education for handicapped students. *Exceptional Children*, 1979, *45*(4), pp. 246-253.

Colella, H. Career development center: A modified high school for the handicapped. *Teaching Exceptional Children*, 1973, *4*(3), pp. 110-118.

Copeland, A. *Textbook of adolescent psychopathology and treatment*. Springfield, Illinois: Charles C Thomas Publisher, 1974.

Cullinan, D. Behavior modification with adolescent problems. In D. Sabatino and A. Mauser (Eds.), *Intervention strategies for specialized secondary education*. Boston: Allyn and Bacon, Inc., 1978.

Davis, W. Vermont students encounter real-life dilemmas in school. *St. Petersburg Times*, May 20, 1979, p. 10E.

Federal Register. Tuesday, August 23, 1977, Part II (Rules and regulations for amendments to Part B, Education of All Handicapped Children Act of 1975, *PL 94-142*, Education of Handicapped Children.

Fixsen, D., Phillips, E., and Wold, M. Achievement place: Experiments in self government with pre-delinquents. *Journal of Applied Behavior Analysis*, 1973, *6*, pp. 31-47.

Glasser, W. *Class Meetings and Schools Without Failure*. LaVerne, California: LaVerne College Center, 1971.

Gossett, J., Lewis, S., Lewis, J., and Phillips, V. Follow-up of adolescents treated in a psychiatric hospital: I. A review of studies. *American Journal of Orthopsychiatry*, 1973, *43*(4) pp. 602-610.

Graubard, P. The use of indigenous grouping as the reinforcing agent in teaching disturbed delinquent to learn. In N. Long, W. Morse, and R. Newman (Eds.) *Conflict in the classroom: The education of emotionally disturbed children*. 3rd edition. Belmont, California: Wadsworth Publishing Company, Inc., 1976.

Hobbs, T. and Holt, M. The effects of token reinforcement on the behavior of delinquents in cottage settings. *Journal of Applied Behavior Analysis*, 1976, *9*, pp. 189-198.

Homee, L., Csanyi, A., Gonzales, M., and Richs, J. *How to use contingency contracting in the classroom*. Champaign, Illinois: Research Press, 1969.

Jesness, C. and DeRisi, W. Some variations in techniques of contingency management in a school for delinquents. In J. Stumphauzer (Ed.) *Behavior therapy with delinquents*. Springfiled, Illinois: Charles C. Thomas, Publisher, 1973.

Jury, M., and Jury, D. Grow up fast in this school. *Parade*, October 14, 1979, pp. 24-25.

Kauffman, J. and Nelson, C. Educational programming for secondary school-age delinquent and maladjusted pupils. *Behavioral Disorders*, 1976, *2*(1), pp. 29-37.

Kelly, E. Our overcrowded secondary schools. *The Educational Forum*, 1978, *42*(2), pp. 151-167.

Marsh, G., Gearheart, C. and Gearheart, B. *The learning disabled adolescent. Program alternatives in the secondary school*. St. Louis: C. V. Mosby Co., 1978.

McDowell, R. and Brown, G. The emotionally disturbed adolescent: Development of program alternatives in secondary education. *Focus on Exceptional Children*, 1978, *10*(4), pp. 1-15.

Mercer, J. The who, why, and how of mainstreaming. Paper presented at the Annual Meeting of the American Association of Mental Deficiency, Toronto, Canada, June, 1974.

Northcutt, J. and Tipton, G. Teaching severely mentally ill and emotionally disturbed adolescents. *Exceptional Children*, 1978, *45*(1), pp. 18-23.

O'Leary, K., and Drabman, R. Token reinforcement programs in the classroom: A review. *Psychological Bulletin*, 1971, *75*, pp. 379-398.

O'Leary, K. and O'Leary, S. *Classroom management: The successful use of behavior modification* (2nd edition) New York: Pergamon Press, Ltd., 1977.

Phillips, E. L., Phillips, E. A., Fixsen, D., and Wolf, M. Achievement Place: Modification of the behaviors of pre-delinquent boys within a token economy. *Journal of Applied Behavior Analysis*, 1971, *4*, pp. 45-59.

Razeghi, J. and Davis, S. Federal mandates for the handicapped: Vocational education opportunity and employment. *Exceptional Children*, 1979, *45*(5), pp. 353-359.

Rutherford, R. and Edgar, E. *Teachers and parents*. Boston: Allyn and Bacon, Inc., 1979.

Sabatino, D. and Mauser, A. *Intervention strategies for specialized secondary education*. Boston: Allyn and Bacon, Inc., 1978.

Shea, T. *Teaching children and youth with behavior disorders*. St. Louis, The C. V. Mosby Co., 1978.

Stuart, R. Behavioral contracting with families of delinquents. *Journal of Behavior Therapy and Experimental Psychiatry*, 1971, *2*, pp. 1-11.

Stuart, R. and Lott, L. Behavioral contracting with delinquents: A cautionary note. *Journal of Behavior Therapy and Experimental Psychiatry*, 1972, *3*, pp. 161-169.

Swanson, H. and Reinert, H. *Teaching strategies for children in conflict*. St. Louis: The C. V. Mosby Co., 1979.

Vogel, J. and Smith, A. Rx for change: the classroom meeting. *Learning*, 1974, *2*(7), pp. 69-72.

Young, W. Crime in the classroom. *Reader's Digest*, May 1976, pp. 197-201.

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Behaviorally Disordered Adolescents as Academic Change Agents

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INTRODUCTION

The bulk of the literature on behaviorally disordered students supports the fact that the majority of the students are academically delayed. Not surprisingly, many authorities have underscored the importance of providing child-specific instruction in order to ameliorate academic as well as behavioral deficiencies. Unfortunately, a wide discrepancy exists between the principle of individualized instruction and its current practice with regard to many behaviorally disordered youngsters (Gable and Hunter, *in press*).

While the benefits of student-specific instruction are incalculable, full individualization is often not attainable because of constraints of time and personnel. One possible solution to further extending the concept of individualized instruction is to use students as peer-tutors. Available evidence indicates that the advantages of casting classmates in the role of academic change agents are at least threefold. First, the influence that peers exert on one anothers' behavior is widely demonstrated. As McGee, Kauffman, and Nussen (1977) attest, "a child's social status appears to be directly linked to the frequency and type of reinforcement dispensed by and given to him" (p. 452). Peers represent not only a powerful source of reinforcement but also an abundant and readily accessible classroom resource (Strain, Gable, and Hendrickson, 1978). Indeed, peers have been taught successfully to deliver remedial instruction in spelling (Harris, Sherman, Henderson, and Harris, 1972); math (Harris and Sherman, 1973); word recognition (Jenkins, Mayhall, Pescha, and Jenkins, 1974); and, oral reading (Willis, Crowder, and Morris, 1972). Viewed together, these studies suggest that peers are capable of applying, at times, complex intervention strategies, and in turn, positively influencing the academic achievement of other students. Second, training deviant youth to change the behavior of classmates appears to have consequences for both the tutor and the learner (Graubard, Rosenberg, and Miller, 1971). More precisely, in the process of modifying the behavior of others, peers reportedly change their own behavior and, thereby obtain increased positive feedback. At the least, one could argue that engaging youngsters in the role of behavioral engineers provides an opportunity to promote and sustain academic responses that are incompatible with deviant classroom conduct. Third, once tutorial programming is underway, daily demands on the teacher are usually limited to intermittent checks on tutor-learner progress. Then teachers are free to reallocate time for instruction in areas for which adult intervention is called. Unfortunately, too little attention has been given to explicating procedures that would allow more

widespread replication of peer-tutoring programs. In the discussion that follows we examine the use of severely behaviorally disordered adolescents as an instructional resource in a residential special education program. More precisely, issues presented include: (A) selection of peer tutors; (B) training of peer tutors; (C) curricular content taught; and (D) monitoring tutor-learner interaction.

DESCRIPTION OF PEER-TUTORING PROGRAM

Participants and setting

As the work of Gable, Hendrickson, and Strain (1978); Nelson, Worell, and Polsgrove (1973); Strain, Kerr, and Ragland (1979), and Whelan and Henker (1969), has confirmed, characteristics of change agents have not limited their participation as behavioral engineers. When students engage in a well-structured teaching situation with opportunity to obtain regular feedback regarding their efforts, the fact that they too are in special classes has not posed insurmountable problems.

In the present study, the students who served as peer tutors, two male and four female, were in residential treatment because their problems were so extreme that neither the public school, the family, nor the community at large was deemed capable of providing the breadth and intensity of necessary services. *Table 1* summarizes data pertaining to sex, age, standardized IQ scores (WISC-R), and clinical diagnosis of the six adolescents who served as peer tutors.

In recruiting students to be trained as peer tutors, youngsters were chosen who were observed to engage in some form of positive social interaction with classmates (Gable, Strain, and Hendrickson, *in press*). Furthermore, only those students who exercised some measure of self-control in remaining "on-task" during classroom instruction were considered. As arithmetic was one curricular area singled out for instruction, another criterion for selecting candidates centered on identifying those students competent in calculating problems sampled from the range of subskills to be taught (Surratt, Ulrich, and Hawkins, 1968).

Of the 23 youths who served as tutees, 20 boys and three girls, 11 were scheduled for arithmetic instruction (these and other youngsters received

TABLE 1

Sex, Age, IQ and Clinical Diagnosis of Tutors

Number	Sex	Age	IQ	Clinical Diagnosis
1	M	15	97	Hysterical Personality with Borderline Features
2	M	17	101	Passive-dependent Personality
3	F	17	106	Borderline Personality Disorder
4	F	16	99	Adjustment Reaction of Adolescence
5	F	15	122	Borderline Personality Disorder
6	F	14	91	Depressive Neurosis

remedial reading training as well). Children were selected on the basis of their poor academic functioning (*i.e.*, two to four years below anticipated grade level) coupled with a need for instruction comprised of repeated drill and practice. Records show that the mean age of tutees was 12 years four months (with a range of from nine to thirteen years); whereas, the average IQ score (WISC-R) was 93 (with a range of from 78 to 108).

The program was conducted at the National Children's Rehabilitation Center, a residential psychiatric facility for youngsters from seven to seventeen years of age, located in Leesburg, Virginia. The training sessions took place in the facility's school classrooms.

Training the Peer Tutors

McGee *et al.*, (1977) assert that "fundamental to a change agent's effectiveness is the amount and kind of training received in order to perform the various functions of intervention" (p. 466). This peer tutoring program began with a series of training exercises that pertained to three major tasks. The training paradigm consisted of an instructional package that included: (A) use of a sequence of materials-instruction references to specific subskills; (B) use of selected contingency management strategies; and (C) use of data collection procedures. Training was geared toward providing students the opportunity to engage repeatedly in appropriate practice of teaching behaviors judged relevant to the content and format of instruction. Each subskill area to be taught was pinpointed so that peer training corresponded with specific tutee needs. This information was obtained through a series of criterion-referenced pretests administered to tutees prior to initiating peer training exercises.

Each student recruited to serve as a peer tutor received two forms of training: (A) initial preparation and (B) follow-up assistance. The purpose of the initial training was to insure each tutor's mastery of prerequisite skills (*i.e.*, sequence of materials, instructional presentation, appropriate use of praise, prompts and ignoring, and collection of daily data on tutee's progress. To accomplish this, tutors participated in a didactic presentation during which time the supervising adult modeled each step of the instructional sequence. Following this presentation, tutors received a script detailing the narrative form each step of the instructional package and then were assigned to a "training team." Each team member played in succession three roles: tutor, tutee and evaluator. In the role of tutor, youngsters repeatedly engaged in instruction corresponding to the scripted sequence. The role of evaluator required the student to give prompts, feedback and praise to others who were engaged in simulated tutoring (Davis, 1972). After a series of trials in each role, tutors next were evaluated by the trainee (adult) while engaged in simulated instruction of a peer. A standard observation form corresponding to the sequence of teaching procedures being introduced was used (Shores and Stowitschek, 1976). The observation form was used for both pre-tutoring evaluation monitoring throughout the program. In all, approximately 15 hours of supervised training was provided.

Once the tutoring program began, a second form of training was conducted during two weekly meetings: (A) one was a group problem-solving session involving all tutors and the supervising teachers and (B) the second was an individual session with each tutor and the teacher.

Establishing a performance criteria

As advocated by Johnson and Bailey (1974), a preselected performance level served as the means for determining when tutors had mastered the sequence of teaching strategies. A trials-to-criterion measure called for trainees, for example, to "correctly engage in a three step instructional sequence, five consecutive times." Tutors were expected to practice delivering instruction until the stated proficiency level was attained.

Most peer tutors can be taught to make accurate discriminations as to the accuracy of learner responses, and then, consistently deliver praise statements for corrects, ignore errors, and/or engage in further instruction. Tutors were trained to become skilled in administering these basic behavioral practices. Repeated modeling of the desired behavior was especially useful. Finally, tutors were taught accurately to apply a learner assessment procedure. A daily probe of tutee responses conducted at the end of each lession provided comparative data across tutorial sessions.

Motivational factors

The issue of motivation is generally recognized as being crucial to the successful outcome of any peer-mediated program (Willis, 1972). To maintain a high level of motivation among tutors and learners, direct observation and feedback was combined with a formal contract stipulating performance expectancies. Tutors entered into an agreement wherein the conditions for remaining a peer tutor were clearly spelled out. A multiple set of criteria were established across treatment settings of the facility that called for tutors to: (A) Attain at least 90 percent of all daily academic and social-interpersonal objectives; (B) maintain at least a Level III rating (of four levels, with succeedingly more demanding expectations) in the group living program; and (C) demonstrate that tutee(s) were progressing toward specified objectives. In the event that a youngster failed to maintain an acceptable performance level s/he received a letter of reprimand stating not only the behavior that was unsatisfactory but also enumerating the steps leading to being able to demonstrate acceptable behavior. If a youngster failed a second time to maintain acceptable performance across settings, a response cost was imposed whereby he/she was suspended from the tutoring program for three days. Tutors were compensated the minimum wage through funds available under the Comprehensive Employment and Training Act (CETA); not surprisingly, this served as a highly reinforcing arrangement. Throughout the peer-instructional program tutees entered into individually prescribed contractual agreements with the tutor. A variety of reinforcers were selected on the basis of tutees stated preferences.

Curricular content/teaching strategies

The content of instruction represents another major factor in the development of a peer tutoring program. Arithmetic was one area chosen for instruction because: (A) arithmetic lends itself to instruction based on repeated drill and practice; (B) subskill operations can be identified and arranged in a hierarchial order with discrete subskill statements for each objective; (C) arithmetic instruction allows for active participation by the tutor

and learner; and (D) learner responses require little or no inference and are able to be reliably recorded as correct or erred (Gable and Hunter, *in press*). Instructional materials consisted of a modified version of the *E-B Press Tutorial Series: Math Combination Program* (Hofmeister, Landeen, and Rosen, 1975).

In developing the tutorial program, attention next shifted to the tutee's entry level capabilities, in order to select appropriate teaching strategies. Since the majority of tutees' computational skills were found to be at an acquisition stage, tutors were taught to engage in a teaching sequence that relied on antecedent modeling, the use of a permanent product coupled with precise praise (Lovitt, 1977). The strategy called for the tutor to present the problem and state the verbal response (step-by-step computational operation) that s/he wished the learner to imitate before the tutee was asked to respond. For learners functioning at a more advanced stage of acquisition, mastery over about half of the fundamentals, modeling was paired with corrective feedback (Gable and Hendrickson, *in press*). With the combined use of modeling and corrective feedback identifying the response as correct or incorrect. As tutees approached a level of proficiency in attaining subskill objectives emphasis shifted almost entirely to manipulating the contingencies of reinforcement.

During the implementation phase of the tutorial program, the pace of instruction was dictated by the rate of progress evidenced by each tutee. A new subskill objective was introduced only after the tutee attained mastery measured on a trials-to-criterion basis (*i.e.*, three consecutive corrects, within three seconds or less, and in the absence of a model or permanent product). Following each session in which a probe was administered, the tutee was instructed to record his/her score on a bar graph for future comparison.

Data collection and feedback procedures

The final aspects of the peer tutoring program were data collection and feedback to tutors. As previously stated, teaching strategies were sequential in nature and consisted of a step-by-step presentation format. Therefore, a numerical coding and recording system was selected to capture the temporal/sequential arrangement of that instruction. Each step of the sequence was recorded, as follows: (A) Stimulus Event (*i.e.*, model, redirect, other); (B) Learner Response (*i.e.*, correct, error, no response, other); and (C) Consequent Event (*i.e.*, praise, prompt, ignore, other). Once trainees attained mastery over the teaching sequence they were taught to monitor the tutor-learner interactions of one another using the same numerical coding system. This permitted tutors to make certain decisions regarding the extent to which they remained faithful to the prescribed teaching strategy.

Feedback sessions conducted by the supervising adult served as a vehicle for exchanging information regarding the technical application of teaching strategies or materials usage and for analyzing the impact of instruction on learner performance. Data were regularly reviewed to ascertain if changes in the tutorial program were warranted. Throughout the program, tutors adapted materials, adjusted instructional and modified contractual arrange-

ments with tutees on the basis of tutee performance and in consultation with the supervising teacher.

OUTCOME AND CONCLUSIONS

The use of behavioral disordered adolescents as peer tutors produced about thirty minutes of arithmetic instruction daily for eight weeks. A total of 827 objectives, each corresponding to a discrete subskill operation, covering addition (380), subtraction (252), and multiplication (195) were introduced. Of that number, tutees demonstrated mastery of 719 objectives. Calculated across the eleven participants, this figure represented 86.9 percent of objectives attempted.

The relative effectiveness of the peer tutoring program may be linked to a combination of factors. Although somewhat speculative, it would seem that the use of empirically supported training procedures, *i.e.*, modeling, coupled with a preselected performance criterion, contributed to a high level of tutor competency (Davis, 1972). Intermittent observation and corrective feedback from adults may have served to maintain a degree of consistency. Finally, data-based instructional decisions may have resulted in a measure of uniformity across tutors in program implementation.

Not only were probes administered to tutees throughout the program, but tutors were also tested as to their accuracy and rate of arithmetic computation. In this way, an attempt was made to ascertain the influence of repeated instruction on tutor's performance. Comparison of pre- and posttest scores revealed little gain among tutors was evidenced. Even though the evaluative procedure was rather crude, findings may be attributable to the fact that tutors scored almost 100 percent (mean score of 93.4 percent) on preassessments covering subskills then taught, and that subskill operations taught were often substantially below the competency level of the tutors.

Often, conventional instruction demands the continuous presence of an attentive adult. Even in special education settings with a decreased teacher-pupil ratio, full individualization is difficult to accomplish. It is remarkable then that the systematic use of peer-mediated instruction has not been more extensively utilized by teachers of the severely behavior disordered. The positive influence of peer tutors, reflected by improved computational skills of tutees, is consistent with results reported with less seriously handicapped youngsters (*e.g.*, Johnson and Bailey, 1974). Furthermore, the positive influence of the program further substantiates the contention that tutor characteristics have not proven to be a principal factor in determining the impact of peer tutoring programs.

REFERENCES

Davis, M. Effects of having one remedial student tutor another remedial student. In G. Semb (Ed.), *Behavior analysis and education—1972*. Lawrence, Kansas: University of Kansas Support and Development Center for Follow-through, Department of Human Development, 1972.

Gable, R., Hendrickson, J., and Strain, P. Assessment, modification, and generalization of social behavior among severely retarded multihandi-

capped children. *Education and Training of the Mentally Retarded*, 1978, *13* (3), pp. 279-286.

Gable, R., and Hendrickson, J. Teacher feedback: Its use and impact on learner performance. *Journal of Special Education Technology*, in press.

Gable, R. and Hunter, B. Use of behavior disordered peers as an instructional resource. *The Pointer*, in press.

Gable, R., Strain, P., and Hendrickson, J. Strategies for improving the status and social behavior of learning disabled children. *Learning Disability Quarterly*, in press.

Graubard, P., Rosenberg, H., and Miller, M. Student applications of behavior modification to teachers and environments or ecological approaches to social deviancy. In E. Ramp and B. Hopkins (Eds.), *A new direction in education: Behavior analysis—1971*. Lawrence, Kansas: University of Kansas, 1971.

Harris, V. W. and Sherman, J. A. Effects of peer tutoring and consequences on the math performance of elementary classroom students. *Journal of Applied Behavior Analysis*, 1973, *6*, pp. 587-597.

Harris, V. W., Sherman, J. A., Henderson, D. G., and Harris, M. S. The effect of a tutoring procedure on the spelling performance of elementary classroom students. In G. Semb (Ed.), *Behavior analysis and education—1972*. The University of Kansas Support & Development Center for Follow-through, Department of Human Development, 1972.

Hofmeister, A., Landeen, J., and Rosen, T. *E-B press tutorial series: Math combination program*. Eugene, Oregon: Englemann-Becker Corporation, 1975.

Jenkins, J., Mayhall, W., Pescha, C., and Jenkins, C. Comparing small group and tutorial instruction in resource rooms. *Exceptional Children*, 1974, *40*, pp. 245-251.

Johnson, M. and Bailey, J. Cross-age tutoring: Fifth graders as arithmetic tutors for kindergarten children. *Journal of Applied Behavior Analysis*, 1974, *7*, pp. 223-232.

Kauffman, J. *Characteristics of children's behavior disorders*. Columbus, Ohio: Merrill, 1977.

Lovitt, T. *In spite of my resistance . . . I've learned from children*. Columbus, Ohio: Merrill, 1977.

McGee, C., Kauffman, J., and Nussen, J. Children as therapeutic change agents: Reinforcement intervention paradigms. *Review of Educational Research*, 1977, *47* (3), pp. 451-477.

Nelson, C. M., Worell, J., and Polsgrove, L. Behaviorally disordered peers as contingency managers. *Behavior Therapy*, 1973, *4* (2), pp. 270-276.

Shores, R. and Stowitschek, J. *Prototype model for developing empirically based special education teacher competencies*. USOE/BEH Grant No. 0723177, Year-end Report, 1976.

Strain, P., Gable, R., and Hendrickson, J. Peer-mediated social initiations: A procedure for promoting social behavior with mainstreamed children. *Journal of Special Education Technology*, 1978, *4*, pp. 33-38.

Strain, P. S., Kerr, M. M., and Ragland, E. U. Effects of peer-mediated social initiations and prompting/reinforcement procedures on the social behavior of autistic children. *Journal of Autism and Developmental Disorders*, 1979, *9* (1), pp. 41-53.

Surratt, P., Ulrich, R., and Hawkins, R. An elementary student as a behavior engineer. *Journal of Applied Behavior Analysis*, 1969, *2*, pp 85-92.

Whalen, C. and Henker, B. Creating therapeutic pyramids using mentally retarded patients. *American Journal of Mental Deficiency*, 1969, *74*, pp. 331-337.

Willis, J., Crowder, J., and Morris, B. A. A behavioral approach to remedial reading using students as behavioral engineers. In G. Semb (Ed.), *Behavior analysis and education—1972*. Lawrence, Kansas: University of Kansas, 1972.

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An Analysis of the Effects of Various Instructional Procedures on the Oral Reading Performance of High School Special Education Students

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INTRODUCTION

Several observers have noted that low academic functioning is a frequent and enduring characteristic of students who exhibit behavior problems and that these students typically have a negative attitude towards school which can often be traced to inadequate academic performance and faulty instruction (McCafrey and Cumming, 1969; Feldhusen, Thurston, and Benning, 1967, 1970; Kauffman, 1977). As reading is probably the most important single academic skill, an important goal for teachers of emotionally disturbed or behaviorally disordered children and youth is to enhance the reading performance of their students.

Despite a plethora of reading research, there exists a great need to develop instructional methods a teacher can easily and reliably use in the classroom for improving the performance of students with reading deficiencies (Chall, 1967; Kaluger and Kolson, 1972; Lovitt, 1975a and 1975b). A number of applied behavior analysis studies have demonstrated the effectiveness of consequences such as token reinforcement or free-time, an activity reinforcement to increase reading accuracy, word recognition and comprehension scores of a variety of students of various ages (Staats and Butterfield, 1965; Lovitt, Eaton, Kirkwood, and Pelander, 1971; Fox and Hall, 1972; Rieth, Polsgrove, Raia, Patterson, and Buchman, 1977).

Recently, applied behavior analysis studies have evaluated the effectiveness of instructional procedures traditionally used by teachers in the classroom, such as corrective feedback, oral and silent rehearsal, and listening. *Corrective feedback* entails the teacher verbally correcting the student's oral reading errors when they occur and requiring him to repeat the correct response immediately after the correction. The *rehearsal* technique, in-

volves the students reading the target passage either orally or silently, without corrective feedback before reading it aloud to the teacher. Listening simply entails the pupil listening to an audio-tape recording of the passage while reading a written version, before reading it aloud to the teacher. Several studies have employed these procedures, either singly or in combination.

Staats and Butterfield (1965) combined preview, corrective feedback, and token reinforcement procedures to significantly reduce reading errors and to increase reading test scores in a delinquent adolescent. Martin (1972) demonstrated that when instructors corrected pupil errors using corrective feedback, word acquisition rates accelerated more than when children were merely told whether the response was right or wrong. Lovitt (1976) reported on two studies done by Eaton (1972) which compared corrective feedback, silent rehearsal and listening procedures. Corrective feedback and listening reportedly doubled the pupils' correct rates but had little effect on reducing error rates, while silent rehearsal also produced multiple gains and correct rates. Lovitt, Schaff, and Sayre (1970) found that silent listening to an audio-taped reading passage produced greater increases in correct oral reading rates and decreased error rates than corrective feedback procedures but silent reading while listening to the tape produced even greater gains. Hanson and Eaton (1978) reported on a study by Eaton, Lovitt, Sayre, and Lynch (1974) that compared oral rehearsal, corrective feedback, silent rehearsal, and listening for their effects on the correct and error rates of eight children, ages 7-13. Corrective feedback and listening more effectively increased correct rates and reduced error rates than oral or silent rehearsal. Oral and silent rehearsal produced moderate increases in correct rates and decreases in error rates.

In general, the studies reported above indicated that instructional procedures effectively increased the reading performance of elementary school students. Corrective feedback appeared to be the most effective procedure, followed by listening and rehearsal procedures. The present study was undertaken to replicate and extend the Eaton, Lovitt, Sayre, and Lynch (1974) study to evaluate the efficacy of these interventions with mildly handicapped secondary students who presented chronic learning and behavior problems.

METHOD

Subjects and setting

The six students who participated in the study ranged in age from 15 through 18 years and were enrolled in a special education summer school program for chronic learning and behavior problems in a large urban high school. Instruction was provided individually to each student in a vacant room located near the main classroom by a teacher who held a masters' degree in special education and had four years' experience in teaching learning disabled and behaviorally disordered students.

Procedures

126 *Training sessions.* Depending on the length of the reading passage, reader

skill and motivation, each training session lasted approximately 15 to 20 minutes. Sessions consisted of an instructional period, in which the teacher provided appropriate training, immediately followed by a testing period, during which students read the selected passage orally into a tape recorder and answered comprehension questions.

The passages and comprehension questions for the study were selected from the SRA level 2A and 3A reading kits. The length of the passages varied from 300 to 500 words each. All students were placed appropriately in the SRA reading sequence based upon their performance on the SRA placement test and their attainment of between 85 and 90 percent words correct reading accuracy on a five-minute informal reading test.

Dependent measures. Following each training session the teacher reviewed the tape recordings of the reading passages and scored these for errors: substitutions, mispronunciations, omissions, additions, and teacher aid for hesitations and unknown words. These data were used to calculate the percentage of correct responses, the rate of correct reading responses per minute, and the rate of errors per minute for each student. These measures plus the percentage of comprehension questions answered correctly are reported in *Table 1*. The tapes also were scored for errors independently by an observer who was naive regarding the purpose of the study. Interobserver reliability was calculated twice on each student's performance during each condition in the study and ranged from 77 to 94 percent with a median of 86.5 percent.

Research design. The effects of various instructional procedures were evaluated using a withdrawal design as described by Leitenberg (1970). The independent variables included *listening*, *silent rehearsal*, *corrective feedback*, *performance feedback*, and *grade contingency*.

Baselines 1 and 2. During the baseline periods, all students were ushered to the training room by the teacher who presented the assigned reading passage and asked the student to read it aloud into the tape recorder. Students read these passages without any aid from the teacher. When they encountered an unknown word or hesitated for five seconds, they were told simply to "go ahead."

Silent rehearsal. The silent rehearsal procedure involved having students read the passage to themselves prior to reading it orally to the teacher. No other instruction was given during this phase.

Listening. In the listening intervention procedure students were instructed to read a passage silently while the teacher read it aloud. They then read the passage orally.

Corrective feedback. Under the corrective feedback condition the students read the passage and the teacher corrected mistakes they made and had them pronounce the word correctly before proceeding. They then read the passage a second time into the tape recorder.

Performance feedback and contingency. In this condition, students were shown graphs of their correct oral reading rates (Performance Feedback) daily and told that if they met or exceeded their baseline averages, they would receive points that would be used to figure their final grades in the

TABLE 1

Student	Dep. Var.	Base-Line 1	Listen	% Change	Base-Line 2	Listen + PF + C	% Change
Ruby	C%	83.1	80.4	−3.0	76.4	83.8	+9.6
	CR	65.4	64.5	−1.0	51.4	57.7	+12.0
	ER	9.7	13.8	+42.0	16.0	11.0	−31.0
	COMP%	76.0	77.0	+1.0	80.0	90.0	+10.0
Wayne	C%	85.4	90.4	+6.0	79.5	80.0	—
	CR	50.8	54.2	+6.0	56.3	55.6	−1.0
	ER	8.5	11.9	+40.0	14.5	13.8	−4.8
	COMP%	61.0	30.0	−29.0	46.0	30.0	−16.0
	Dep. Var.	**Base-Line 1**	**Silent Rehearsal**	**% Change**	**Base-Line 2**	***CF + PF + C**	**% Change**
Terry	C%	88.3	88.9	—	87.2	93.4	+7.0
	CR	65.4	64.5	—	69.2	84.9	+22.7
	ER	8.2	7.9	−4.0	10.0	6.0	−60.0
	COMP%	50.0	66.0	+16.0	66.0	73.0	+7.0

Roy	C%	82.9	80.8	+2.5	79.5	*89.3	+9.8
	CR	36.8	39.0	+5.9	35.4	*50.9	+43.7
	ER	7.6	9.3	+22.8	9.1	*6.1	−32.9
	COMP%	44.0	68.0	+24.0	73.0	*78.0	+5.0

	Dep. Var.	Base-Line 1	CF	% Change	Base-Line 2	CF + PF + C	% Change
Larry	C%	90.4	90.55	—	86.6	91.5	+5.6
	CR	52.2	62.8	+20.3	52.1	96.0	+15.1
	ER	5.5	6.4	+16.4	8.1	5.7	−29.6
	COMP%	37.0	61.0	+24.0	44.0	61.0	+17.0
Nan	C%	92.5	93.9	+1.5	91.2	93.9	+2.9
	CR	71.5	74.9	+4.7	67.3	84.7	+25.8
	ER	5.7	5.2	−8.7	6.5	5.4	−16.9
	COMP%	63.0	77.0	+14.0	86.0	80.0	+6.9

Independent Variable: CF = Corrective Feedback; PF = Performance Feedback; C = Contingency Arrangement.
Dependent Variable: C% = Correct Percentage; CR = Correct Rate; ER = Error Rate; COMP% = Comprehension Percentage.
* No Contingency Arrangement was in effect for these data.

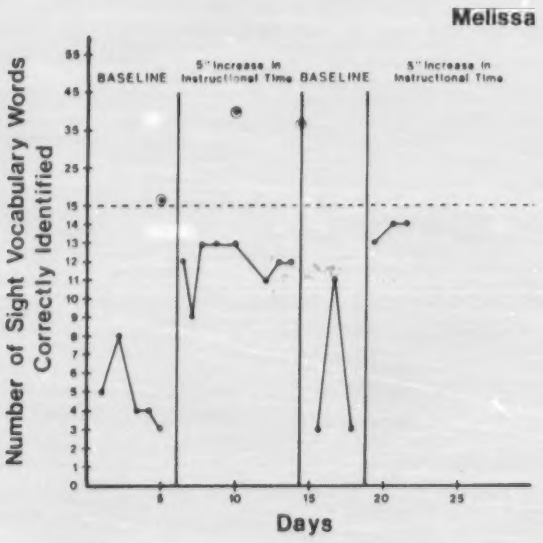
summer program. The points determined approximately 50 percent of their final grades. To evaluate the effect of giving performance feedback only, one student (Roy) was shown his graph but did not have the opportunity to earn points toward his grade.

RESULTS

The individual students' data in terms of correct percentage, correct rate and error rate, appear in *Figure 1* and are summarized in *Table 2*. The data indicated that the listening procedure had little effect on either percentage correct or correct rate and actually resulted in increases in error rates for the two students exposed to this condition. Performance contingencies reduced Ruby's error rate by 31 percent, although it still remained above the initial baseline average, and negatively affected Wayne's reading performance. Comprehension scores for the two students also were unchanged when they were exposed to this condition; the addition of a grade contingency produced only a 10 percent improvement in comprehension for Ruby.

Having students merely read a passage to themselves (Silent Rehearsal) produced little change in their oral reading accuracy or correct rates, nor did it reduce their error rates. This procedure produced a 16 percentage point gain in Terry's comprehension score and a 24 percentage increase in Roy's comprehension score.

Providing students with corrective feedback only resulted in a 20 percent improvement in Larry's correct rate and an increase of 24 percentage points



in comprehension; but his error rate also increased 16 percent. For Nan, corrective feedback produced little effect on oral reading performance but resulted in an improvement in comprehension score of 14 percentage points.

Impressive gains in student reading performance occurred when they were provided a combination of corrective feedback, performance feedback, and the grade contingency. Three students exposed to this condition showed notable improvements in correct rates, error rates as well as comprehension scores. A fourth student, Roy, who only received the corrective feedback and performance feedback, showed improvements that paralleled those made by students who received the grade contingency.

DISCUSSION

The results of this study underscore the importance of providing motivating consequences for improving the oral reading performance of secondary students. For the most part, the instructional interventions alone had little effect on increasing oral reading accuracy or correct rate or in reducing students' error rates. When reinforcing contingencies were arranged, five of the six students showed improvements in oral reading accuracy, rate, and comprehension.

Interestingly, when students were given the opportunity to earn points toward their grades for increasing correct rates and for decreasing their error rate, their performance improved. Daily feedback in the form of a graph was also found to have potentially strong motivating effects, since it produced immediate and stable increases in one student's performance.

We were surprised to find that, contrary to the present literature (Lovitt, Schaff, and Sayre, 1970; Eaton, Lovitt, Sayre, and Lynch, 1972), having students listen to a reading passage while reading it (Listening) did not result in any improvement in oral reading performances. In fact, for our secondary students, having them listen to the teacher read the passage while reading it silently proved embarrassing and actually resulted in increases in error rate, an effect that we could not overcome by scheduling consequences.

Silent rehearsal also failed to produce any changes in our students' oral reading performance but notably improved their comprehension scores. Scheduling corrective feedback, performance feedback, and a contingency arrangement for one student produced immediate gains in correct rate and greatly reduced error rate. For another student (Roy) introducing the corrective feedback procedure with provisions for daily performance feedback resulted in dramatic increases in correct rate and reduction in error rate while maintaining previously established improvement in comprehension.

We found corrective feedback alone to have mixed effects on the oral reading performance of one student and little effect on another. However, this technique was effective in increasing students' comprehension scores. Corrective feedback, when combined with daily feedback in the form of graphs and/or grade contingencies, however, appears to be a highly effective treatment package for not only increasing secondary students' oral reading performance, but for improving and maintaining reading comprehension.

In general, we found that with students who may have a lengthy history of school failure and accompanying adjustment and motivational problems a "treatment package" of direct instruction, intrinsic and extrinsic consequences may be necessary to improve their reading skills. Further studies are needed to replicate and clarify these findings, especially in regard to the use of personal goal-setting, self-graphing, and self-evaluation for enhancing student motivation.

REFERENCES

Burdett, C. S., and Fox, W. L. *Measurement and evaluation of reading behaviors: Word recognition, oral reading comprehension.* Austin, Texas: Austin Writers Group, 1973.

Chall, J. *Learning to read: The great debate.* New York: McGraw Hill, 1967.

Eaton, M. Applied behavior analysis of certain reading skills of seven boys with learning disabilities. Unpublished manuscript, University of Washington, 1972.

Eaton, M. and Lovitt, T. C. Achievement tests vs. direct and daily measurement, In G. Semb (Ed.) *Behavior Analysis in Education.* University of Kansas Press, 1972.

Eaton, M., Lovitt, T., Sayre, E., and Lynch, V. The effects of previewing on oral reading rate. Working Paper No. 22 Experimental Education Unit, Child Development and Mental Retardation Center, University of Washington, 1974.

Eisenstein, S. R. The effect of contingent guitar lessons on reading behavior. *Journal of Music Therapy*, 1975, *2*, pp. 138-146.

Feldhusen, J. F., Thurston, J. R., and Benning, J. J. Classroom behavior, intelligence and achievement. *Journal of Experimental Education*, 1967, *36*, pp. 82-87.

Feldhusen, J. F., Thurston, J. R., and Benning, J. J. Longitudinal analysis of classroom behavior and school achievement. *Journal of Experimental Education*, 1970, *38*, pp. 4-10.

Fox, R. and Hall, R. V. Altering pupil reading performance by differentially reinforcing tutoring behavior. Paper presented at the meeting of the International Council for Exceptional Children, Washington, D.C., 1972.

Hanson, C. and Eaton, M. Reading In N. Haring, T. Lovitt, M. Eaton and C. Hanson (Eds.). *The Fourth R Research in the Classroom.* Columbus, Ohio: Charles Merrill, 1978.

Kaluger, G., and Kolson, C. J. *Reading and learning disabilities.* Columbus, Ohio: Charles Merrill, 1969.

Kauffman, J. M. *Characteristics of children's behavior disorders.* Columbus, Ohio: Charles Merrill, 1977.

Lovitt, T. C., Schaff, M., and Sayre, E. The use of direct and continuous measurement to evaluate reading materials and pupil performance. *Focus on Exceptional Children*, 1970.

Lovitt, T. C., Eaton, M., Kirkwood, M., and Pelander, J. Effects of various reinforcement contingencies on oral reading rate. In E. A. Ramp, and B. L. Hopkins (Eds.), *A new direction for education: Behavior analysis.* Lawrence, Kansas: University of Kansas Press, 1971.

Lovitt, T. C. Applied behavior analysis and learning disabilities Part I: Characteristics of ABA, general recommendations and methodological limitations. *Journal of Learning Disabilities*, 1975, *8*, pp. 33-44 a.

Lovitt, T. C. Applied behavior analysis and learning disabilities Part II: Specific research recommendations and suggestions for practitioners. *Journal of Learning Disabilities*, 1975 *8*(8), pp. 504-518 b.

Lovitt, T. C. Applied behavior analysis techniques and curriculum research: Implications for instruction. In N. G. Haring and R. L. Schiefelbusch (Eds.), *Teaching Special Children*, New York: McGraw Hill, 1976, pp. 112-156.

Martin, J. R. Word acquisition rates of first graders as a function of two stimulus sequencing procedures. (Unpl. m. s.) University of Kansas, 1973.

McCaffrey, I. and Cumming, J. Persistence of emotional disturbances reported among second and fourth-grade children. In H. Dupont (Ed.), *Educating emotionally disturbed children: Readings*. New York: Holt, Rinehart & Winston, 1969.

Rieth, H. J., Polsgrove, L., Paia, S., Patterson, N., and Buchman, K. The use of free time to increase the reading achievement of three students placed in programs for behavior disordered children. *Behavior Disorders*, 1977, *3*(1), pp. 45-54.

Staats, A. W., Staats, C. K., Schutz, R. E., and Wolf, M. M. The conditioning of textual responses using "extrinsic" reinforcers. *Journal of the Experimental Analysis of Behavior*, 1962, *5*, pp. 33-40.

Staats, A. W. and Butterfield, W. H. Treatment of nonreading in a culturally deprived juvenile delinquent: An application of reinforcement principles. *Child Development*, 1965, *36*, pp. 925-942.

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An Experimental Analysis of the Effects of Increased Instructional Time on the Academic Achievement of a "Behaviorally Disordered" High School Pupil

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INTRODUCTION

Classroom interventions designed to reduce children's learning and behavior problems typically entail modifying the curriculum, the types and quality of teacher-pupil interactions and the student grouping patterns. Interventions for behaviorally disordered students, however, are often based largely on teacher behavior research. Despite the extensiveness of this literature, few critical teacher behaviors have been identified that lead to predictable student achievement gains across a wide variety of academic settings (Rosenshine and Furst, 1971; Gage, 1973; Rosenshine, 1979). One critical teacher behavior, however, that has been a consistent positive correlate of student achievement gains is the amount of time students are engaged in academic instruction (Rosenshine, 1979).

Several studies have examined the relationship between the amount of instructional time and student achievement. Harris and Serwer (1966) compared four methods of instruction with the reading achievement of 1,441 low socioeconomic status first graders; the amount of instructional time provided by teachers proved the most significant factor in improving student achievement. Studies by Bond and Dykstra (1967), and Harris, Morrison, Serwer, and Gold (1968) reported negative correlations between teacher and student absences and achievement, suggesting that the greater amount of instructional time associated with higher attendance frequencies may be correlated with higher student achievement scores. Reviews by David

(1974) and Block and Burns (1975) identified a number of studies which demonstrated consistent positive relationships between the amount of time students were actively engaged in learning activities and achievement test scores.

The amount of time students spend in on-task activities also appears to be related to their subsequent achievement. McDonald (1975) found student inattentiveness to be negatively related to reading and mathematics achievement. Bennett (1976) after studying the relationship between teaching style and student achievement, concluded that regardless of teaching style, students who spent more time studying a subject had higher achievement in that subject. Harnishchfeger and Wiley (1978) found that some classes in an urban school district received an equivalent of 69 days more instruction per year than others at the same grade level; higher achieving students had as much as 27 percent more direct instruction than lower achieving students, who in turn, had 27 percent more unsupervised seatwork.

Other studies have analyzed students' opportunities to respond actively to academic content materials. Fox (1974) observed first grade pupils in an inner city school and found that they averaged 20 seconds of oral reading per day. Hall, Delquadri, and Harris (1977) reported observational data indicating that fifth-grade pupils in an inner city school spent approximately 50 percent of their class time in transitional activities and less than eight minutes per day making oral or written responses to learning activities. They also reported that some elementary pupils in low income area schools spent less than five seconds per day working on arithmetic facts.

The available literature thus provides a sound basis for concluding that instructional time is a major variable influencing student achievement (Fisher, Berliner, Filby, Marliave, Cohen, Deshaw, and Moore, 1978; Lomax and Cooley, 1979). However, despite the need to increase the achievement of special education students (Semmel, 1979), Rieth, Polsgrove, and Semmel (1979) were unable to find any studies presented in the literature that examined the relationship between instructional time and academic achievement among handicapped populations. This study was therefore intended to explore the relationship between the amount of instructional time and the achievement of a student labeled behavior disordered.

METHOD

Subject

The subject in this study, Melissa, was a 15-year-old female high-school student who had a long history of learning and behavior problems and had been assigned to self-contained classes for students labeled behavior disordered during her entire school career. The study was conducted during a morning summer school program in a local senior high school where Melissa was assigned to a self-contained special education classroom for students with learning and behavior problems. Melissa was found to be achieving at the second-grade level in reading and math on the Wide-Range Achievement Test (Jastak, Bijou, and Jastak, 1965).

Target behavior

Reading vocabulary was chosen as the target behavior in this study because of Melissa's severe deficiency in this area. Initially, Melissa's word-recognition vocabulary was assessed using the Dale-Chall list of 3,000 essential words. Each word from the list was presented to Melissa and scored as correct if she correctly identified it within three seconds of presentation. Words that she did not correctly identify were listed sequentially in order of difficulty which ranged from preprimer to third-grade level and divided into sequential 15-word units. Melissa's vocabulary acquisition was measured by recording the number of words, identified correctly on a quiz administered immediately after each daily training session. Maintenance was measured in terms of the number of words correctly identified on a weekly review test.

PROCEDURES

Baseline I

During the initial baseline, the teacher presented Melissa 15 words from the Dale-Chall list and asked her to identify those she knew. Any words identified within three seconds were replaced by words selected from the list of unknown words. The teacher presented the 15 unknown words one at a time, pronounced the word and asked the student to repeat it. After reviewing the 15 unknown words they were re-presented in the same order for identification in the form of a daily quiz. The teacher recorded correct and incorrect responses without comment. At the end of five days the student was tested on her knowledge of the 75 words presented during the previous five-day period.

Five-minute increase in instructional time

During this condition, in addition to the regular training presented during the Baseline I period the teacher drilled Melissa on the 15 selected words for an additional five minutes. The drill consisted of the teacher showing the student each word individually, pronouncing it for her, and requiring her to repeat it. Words were always presented in the same order and those not identified within three seconds were pronounced by the teacher and the student was asked to repeat it. After this instruction the words were presented individually and pronounced by the student without aid; the teacher recorded correct and incorrect responses. The 75-word mastery test was also given every five days during this period.

Baseline II

Procedures during Baseline II were the same as those during Baseline I.

Five-minute increase in instructional time II

This condition was the same as the second condition. That is, Melissa was exposed to an additional five-minute drill, in addition to the regular instruction time.

RESULTS

Baseline I

During baseline, Melissa identified an average of 4.8 words correctly per day. The range of words answered correctly was between three and eight. She correctly identified 17 words on the 75 words weekly review test.

Five-minute increase in instructional time

Melissa identified on the average, 12.4 words correctly per session with a range between nine and 14. She achieved scores of 40 and 38 respectively on the weekly review tests.

Baseline II

During baseline II condition, Melissa correctly identified on the average of six words per day, the range of words correctly identified was from three to 12.

Five-minute increase in instructional time II

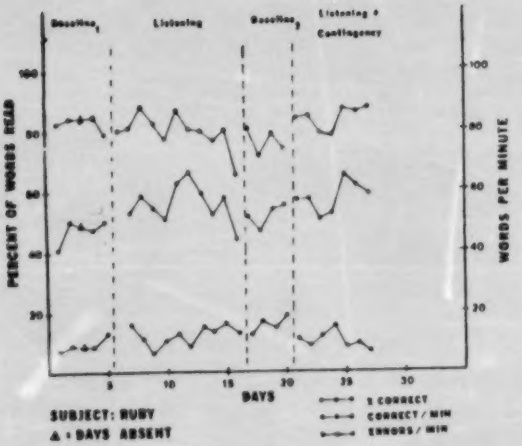
When an experimental condition was reintroduced the mean number of words identified per day increased to 13.67 with a range between 13 and 14 words correctly identified per day.

DISCUSSION

The results of this study indicated that merely increasing instructional time by five minutes led to increases in the *acquisition* and *maintenance* of reading vocabulary words by a 15-year-old female who had been labeled behavior disordered. In this study the five minutes of additional instruction time involved using a modeling-imitation teaching approach (Burdett and Fox, 1973) to provide additional time and opportunities for the student to acquire the target academic behavior.

The result of this study, although preliminary, suggest that what Berliner (1976) calls academic learning time—defined as the amount of time a student spends successfully engaged in an academic task—was related to achievement gains of a handicapped pupil. The results appear sufficiently promising to suggest the need for additional studies assessing the relationship between instructional time and the achievement of handicapped children and for analyzing methods for enabling teachers to increase the amount of instructional time that they are providing to students in their classes.

The current study was conducted in a tutorial setting. Increases in the number and length of individual tutorial sessions may prove difficult for some teachers to implement because of the additional demands on teacher time. However peer or volunteer systems may provide alternatives which could prove beneficial for both tutors and tutees. Other organizational arrangements or alternative instructional arrangements for increasing the



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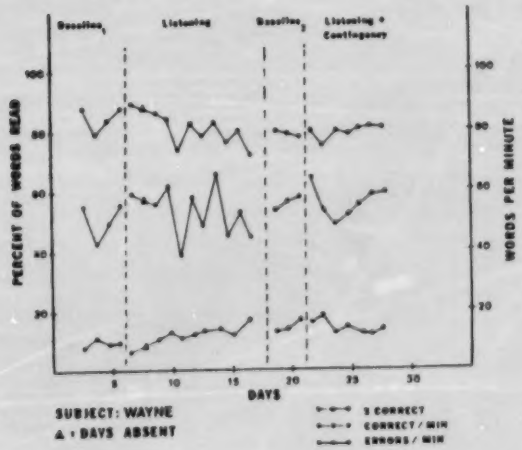

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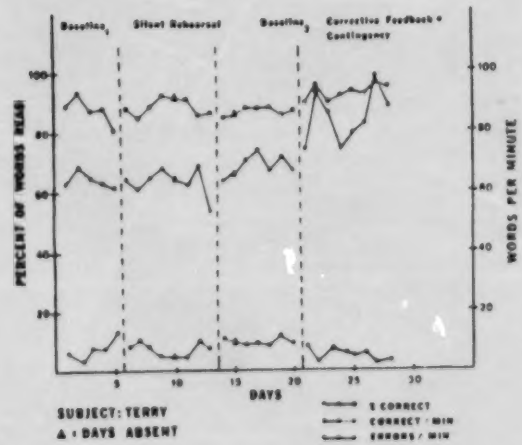

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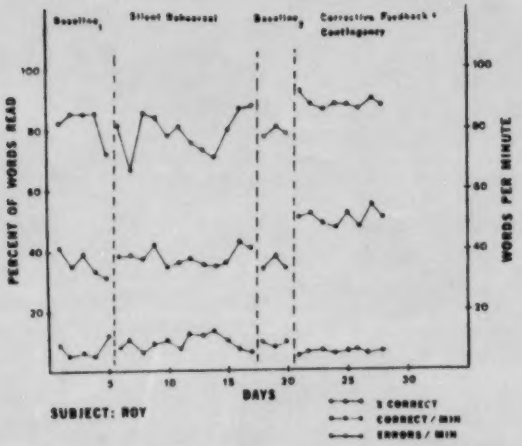
Baseline1
Silent Rehearsal
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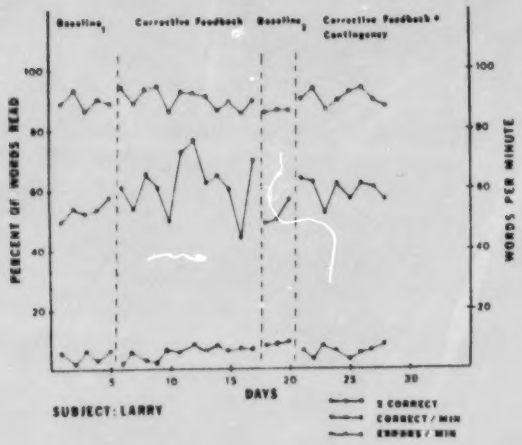
Baseline1
Corrective Feedback
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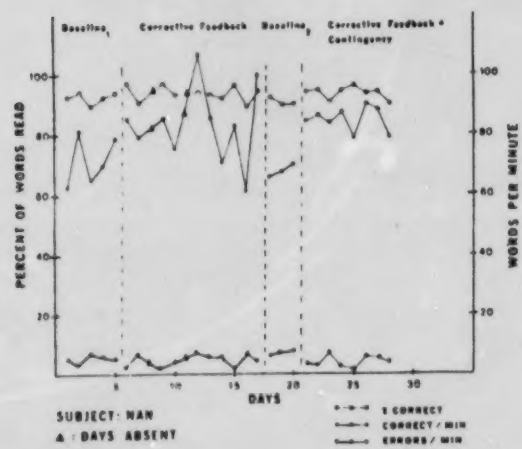
Baseline1
Corrective Feedback
Baseline2
Corrective Feedback + Contingency
PERCENT OF WORDS READ
WORDS PER MINUTE
DAYS
% CORRECT
CORRECT / MIN
ERRORS / MIN
SUBJECT: NAN
▲ : DAYS ABSENT

amount of instructional time will require teachers and researchers to analyze the content and scheduling of the school day. Data are needed to determine what activities and how much instruction are essential for academic growth. A data based system could be constructed for making instructional scheduling and content decisions for handicapped children that can potentially reduce the vast discrepancies between actual and expected academic achievement.

The implications of this study for programs for students with behavior disorders lie primarily in the fact that increases in instructional time and engagement time are incompatible with much of the inappropriate social behavior emitted by these students. The incompatibility should reduce the frequency of these behaviors and provide alternative sources of reinforcement. The study may also prompt an analysis of the content, organization and scheduling of programs for children with behavior disorders.

REFERENCES

Bennett, N. *Teaching styles and pupil progress*. London: Open Books, 1976.

Berliner, D. E. *Instructional time in research on teaching*. Paper presented at meeting of the American Educational Research Association, 1977.

Block, J. and Burns, R. *Time in school learning: An instructional psychologist's perspective*. Paper presented at the annual meeting of the American Educational Research Association, Washington, D.C., 1975.

Bond, G. L., and Dykstra, R. The cooperative research program in first-grade reading instruction. *Reading Research Quarterly*, 1967, 2, pp. 4-142.

Burdett, C. S. and Fox, W. L. *Measurement and evaluation of reading behavior, word recognition, oral reading, and comprehension*. Austin, Texas: Austin Writers Group, 1973.

Carroll, J. B. A model of school learning. *Teachers College Record*, 1963, *64*, pp. 723-733.

David, J. L. *Summer study: A two part investigation of the impact of exposure to schooling on achievement growth*. Unpublished doctoral dissertation, Harvard University, 1974.

Fisher, C. W., Berliner, D. C., Filby, N. N., Marliave, R., Cohen, L. S., Deshaw, M. M., and Moore, J. E. *Teaching and learning in the elementary school: A summary of the Beginning Teacher Evaluation Study*. San Francisco: Far West Labs, 1978.

Fox, R. G. *The effects of peer tutoring on oral reading behavior of underachieving fourth grade pupils*. Unpublished dissertation, University of Kansas, 1974.

Gage, N. L. Paradigms for research on teaching. In N. L. Gage (Ed.), *Handbook of research on teaching*. Chicago: Rand McNally, 1963.

Hall, R. V., Delquadri, J., and Harris, J. *Opportunity to respond: A new focus in the field of applied behavior analysis*. Paper presented at the Midwestern Association for Applied Behavior Analysis, Chicago, 1977.

Harnishchfeger, A., and Wiley, D. E. A perspective for research policy. *Educational Technology*, 1978, *13*, pp. 46-49.

Harris, A. J., Morrison, C., Serwer, B., and Gold, L. *A continuation of the CRAFT project: Comparing reading approaches with disadvantaged urban Negro children in primary grades*. New York: City University of

New York, 1968. (ERIC Document Reproduction Service No. ED 010 297)

Harris, A. J., and Serwer, B. L. The CRAFT Project. Instructional time in reading research. *Reading Research Quarterly*, 1966, 2, pp. 27-57.

Jastak, J. F., Bijou, S. W., and Jastak, S. R. *Wide Range Achievement*. Wilmington: Guidance Associates, 1965.

Lomax, R. G., and Cooley, W. W. *The student achievement instructional time relationship*. Paper presented at the American Educational Research Association Meeting, San Francisco, California, 1979.

McDonald, F. J. *Beginning teacher evaluation study, phase II: Summary report*. Princeton, New Jersey: Educational Testing Service, 1975.

Rieth, J. H., Polsgrove, L., and Semmel, M. I. *The effects of increased engagement time on the acquisition and maintenance of sight vocabulary by mildly handicapped high school pupils*. Center for Innovation in Teaching the Handicapped, 1979.

Rieth, H. J., Polsgrove, L., and Semmel, M. I. A review of research on the relationship of instructional time and achievement: Replications for research and practice in special education. *Education Unlimited*, December 1979 (*in press*).

Rosenshine, B. V., and Furst, N. F. Research on teacher performance criteria. In B. O. Smith (Ed.), *Research in teacher education: A symposium*, Englewood Cliffs, New Jersey: Prentice-Hall, 1971.

Rosenshine, B. V., and Berliner, D. C. Academic engaged time. *British Journal of Teacher Education*, 1978, 4, pp. 3-16.

Rosenshine, B. V., and Furst, N. F. Research on teacher performance criteria. In B. O. Smith (Ed.), *Research in teacher education: A symposium*. Englewood Cliffs, New Jersey: Prentice-Hall, 1971.

Semmel, M. I. *Promising steps teachers may take in working with handicapped students*. London, Ontario: University of Western Ontario, *in press*.

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An Analysis of the Effects of Goal-Setting, Self-Management and Token Reinforcement on Oral Reading Performance of Children with Learning and Behavior Disorders

Richard Cohen, Lewis Polsgrove, and Herbert Rieth

INTRODUCTION

Recent applied behavioral studies have explored the use of several self-management strategies for improving and maintaining children's academic and social behavior in special education classrooms. While this research holds promise for reducing childrens' dependence on external methods of control, the effects of the various strategies have not been clearly documented (Polsgrove, 1979). Several studies have demonstrated that having children observe and record their behavior (self-monitoring) may produce increases in study time (Broden, Hall and Mitts, 1971), oral participation (Gottman and McFall, 1972), and academic productivity (Rieth, Polsgrove, McLeskey, Anderson, and Payne, 1978) especially when children are self-referred or there is a potential for external reward. Another series of studies has compared the effects of teacher reinforcement with children's self-evaluation and self-reinforcement on classroom behavior. Some have shown that under certain conditions children could perform as accurately on academic tasks when they were allowed to evaluate their performance and determine their reinforcement as when teachers performed these functions (Lovitt and Curtiss, 1969; Glynn, 1970). Others have demonstrated that following training in an externally administered token reinforcement program, children would maintain low rates of inattentive and disruptive behavior using self-evaluations and self-reinforcement (*e.g.*, Frederikson and Frederikson, 1975; Kaufman and O'Leary, 1972).

In another series of studies Drabman, Spitalnik and O'Leary (1973) observed that reductions in disruptive behavior generalized across instructional periods when trained children were to match teacher ratings of their behavior. Turkewitz, O'Leary and Ironsmith (1975) found that goal-setting

and self-evaluation were initially ineffective in reducing children's disruptive behavior, however, installing a token program produced immediate reductions in the target behavior. Changes which were maintained at low rates throughout three matching phases in which children who matched teacher point ratings were allowed to exchange points for backup reinforcers; when the matching condition and the token system were faded, goal setting and self-evaluation (without external reinforcement) continued to maintain lower than baseline rates of disruptive behavior.

The present study was intended to partially replicate and extend the Turkewitz, *et al.*, (1975) study by evaluating the effects of the interventions used on the academic performance of students. In the latter study, while students could earn points for meeting teacher-determined levels of disruptive behavior and academic goals, the instructional materials used allowed students to falsify their progress thus obscuring an evaluation of the effects these interventions have on academic performance. The present study was designed primarily to assess the effects of goal-setting, self-management and token reinforcement for enhancing children's academic performance on oral reading accuracy and secondarily to ascertain their effects on attending behavior.

METHOD

Students

Five children, four males and one female, ages 11 to 15 years were enrolled in an after school remedial reading class. Each child had a history of retention, remedial interventions, and/or special-class placement and displayed chronic learning and behavior problems. At the beginning of the study, students were pretested using the reading subtest of the *Wide Range Achievement Test* (*WRAT*) (Jastak, Bijou, and Jastak, 1965) and the *Gilmore Oral Reading Test* (Gilmore and Gilmore, 1968) and averaged reading scores of 3.10 years and 3.8 years respectively on these measures.

Setting

Classes were held at a University affiliated child study center 45 minutes each week day for a total of 82 sessions. The classroom contained standard equipment and was separated by a one-way mirror from an observation room sectioned off to permit observers to work independently.

The classroom teacher, a graduate student in special education with three years of teaching experience, provided instruction and implemented the experimental procedures. She was uninformed on the overall purposes of the study, and received specific instructions only for implementing the various interventions.

DEPENDENT MEASURES AND OBSERVATION PROCEDURES

The primary dependent measure was the mean number of oral reading errors per 50 word sample, taken from the beginning section(s) of each child's daily reading assignment. Errors, which were recorded by the teacher as the

students individually read aloud into a cassette recorder, included substitutions, omissions, repetitions, hesitations, mispronunciations, insertions, disregard of punctuation and teacher aid (Gilmore and Gilmore, 1968). Reliability checks were performed by a trained undergraduate student twice during each experimental phase. Pearson product moment correlations were computed for baseline and withdrawal, both self-evaluation goals and token phases and averaged 80 percent.

Additional dependent measures included the number of reading comprehension problems attempted, skill sheet, reading comprehension problems completed correctly, percentage of student on-task behavior, student and teacher evaluation ratings, and gain score results obtained from pre-post administrations of the standardized tests.

On-task student behavior was observed using a 10-second observation and a 10-second recording sequence. Observers scored the student as on-task when they engaged in eye contact with materials or teacher, correctly postured and/or responded. Each student was observed approximately 10 times during each entire 45 minute class session.

Observations were conducted by two trained students. Reliability was calculated using the percentage agreement method whereby the number of agreements per interval is divided by the total number of agreements and disagreements × 100 (Gelfand and Hartmann, 1975). Reliability scores for on-task behavior averaged 88.8 percent across all phases.

EXPERIMENTAL PHASES

Baseline. At the start of this nine-day phase, each student was placed at an appropriate level in either the *Science Research Associate* (*SRA*) reading laboratory (Parker, 1973) or the *New Practice Readers* series (Stone, Grover, and Anderson, 1962) depending upon individual preferences and according to a 90% oral reading accuracy criterion. Each day the students were asked to: (1) read the first 50 words of their assigned story aloud into a cassette recorder; (2) silently complete and answer the appropriate questions for one story; and (3) complete a variety of reading skill sheets taken from the *Practice Exercises in Basic English* series (Riddle and Peters, 1976). Throughout the sessions the teacher noted each child's progress after the first, second and third 15-minute time segments had elapsed and provided occasional tutorial assistance in word attack and phonics skills. Management of off-task or disruptive behavior was handled by redirecting the student behavior.

Goals. For each of the 10 days in this phase, the teacher assigned one academic and one on-task goal per child at the start of each 15-minute period. These were written on computer cards fastened to each student's desk. The goals assigned for the initial time period involved a description of the maximum number of oral reading errors allowable as well as a subjective description regarding the duration of on-task behavior; *e.g.*, "try and stay on your work for the entire 15 minutes." Academic goals for the latter periods stated the number of problems to be completed correctly. All other procedures were similar to those during the prior baseline phase.

144 *Self-evaluation*. Throughout this 10-day phase, the teacher continued to

specify each student's academic and on-task behavior goals and then to rate their performance at the end of each 15-minute time interval. Each child was permitted to self-assign a maximum of 10 points on their goal cards—five each for academic and on-task behavior, per interval. The teacher kept private ratings of their behavior, giving only general feedback regarding the accuracy of their self-evaluations each day. All other procedures were similar to those during the initial baseline phase.

External tokens. During this phase the teacher assigned goals, rated student performances, and informed each student of the number of points awarded for academic and social behavior following each fifteen-minute time interval. These points were exchangeable daily for back-up reinforcers (*e.g.*, soda pop, candy bars, and school supplies) priced at their current market value plus one third (Turkewitz, O'Leary, and Ironsmith, 1975). All other procedures were similar to the baseline phase.

Matching 100 percent. In this condition the children were again required to evaluate their performance and to try to match the teacher's ratings of their behavior. Child ratings within one point of the teacher's earned an equivalent number of points, exact matches earned a bonus point. Students who exceeded the teacher's ratings by more than one point forfeited all points for that time interval. The teacher continued to exchange points for back-up reinforcers and to praise accurate self-evaluations. This phase lasted five days with all other conditions similar to the prior baseline phase.

Matching 100 percent$_2$. This condition was a replication of the prior matching 100% phase and lasted 12 days.

Matching 66 percent. For two days students were permitted to match the teacher's rating during two of the three time periods. Students were pre-selected to match by "rigging" names drawn from a hat. At the end of each 15-minute interval only the children whose names were selected were permitted to match and were informed of their exact ratings. All other procedures were similar to the prior matching phase. This condition lasted two days.

Matching 33 percent. This procedure was identical to the prior phase except that the children were "chosen" to match the teacher for one rather than two rating periods. This phase lasted five days.

Matching 33 percent 50 percent back-ups. This condition which lasted four days was identical to the prior phase except that only half of the children present who matched were eligible to earn back-up rewards. All other conditions were similar to the first baseline phase.

Self-evaluation$_2$. The children were assigned goals and self-evaluated their behavior, however all token reinforcement and matching procedures were suspended, replicating the first self-evaluation period for five days. All other conditions were similar to the first baseline phase.

RESULTS

Oral Reading Errors

The average number of oral reading errors per student (see *Figure 1* and *Table 1*) was calculated by dividing the total recorded errors by the number

TABLE 1

Average Rates of Academic, On-task and Teacher/Peer Consequences Per Experimental Phase

Phase	Number Oral Reading Errors	# Skill Sheet Comprehension Problems Attempted	% Problems Skill Sheet Comprehension Correctly Completed	% on-task
Baseline	4.91	19.0	79.4	80.3
Goals	4.66	27.3	78.1	86.1
Self Evaluation	3.50	27.7	69.2	74.2
Tokens	2.97	36.6	58.4	73.3
Matching 100%	1.76	45.2	60.4	69.0
Withdrawal	3.25	40.	56.0	50.0
Matching$_2$ 100%	2.13	35.5	55.5	48.0
Matching 66%	1.85	31.5	63.0	76.0
Matching 33%	1.73	37.6	52.8	47.
Matching 33%/50% back-ups	1.31	29.5	49.7	60.
Self Evaluation$_2$	1.51	34.	54.4	40.

of children who read orally. Reading errors averaged about 4.9 during baseline and decreased to about 4.6 and 3.5 during the goals and self-evaluation phases, respectively. Under the token reinforcement conditions, average errors decreased to 2.97 and further dropped to 1.76 during the matching 100 percent phase, whereas during the withdrawal phase, errors increased to a mean of 3.25. Throughout the second matching 100 percent phase, er-

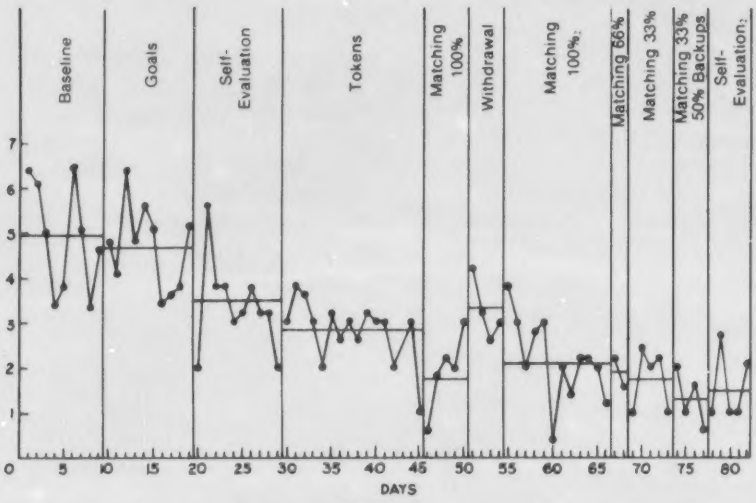

FIGURE 1

A record of the children's oral reading errors across experimental conditions.

rors decreased to 2.13 while further decreases to 1.85, 1.73, and 1.31 occurred during the matching 66 percent, matching 33 percent, 50 percent back-up phases, respectively. A slight increase to an average of 1.51 was observed during the final self-evaluation phase.

Number of Problems Attempted

The number of skill sheet comprehension problems attempted per phase (see *Table 1*) increased to 27.3 and stabilized around this level during the self-evaluation phase. Further increases to 27.6 and 45.2 were observed during the subsequent token and matching 100 percent phases, respectively. Problems attempted decreased to 40, 35.5 and 31.5 during the subsequent withdrawal, matching 100 percent, and matching 66 percent phases, and increased to 37.6 during the matching 33 percent phase. Problems attempted decreased to 29.5 and subsequently increased to 34, during the remaining two phases.

Percent problems completed correctly

Accuracy, which was calculated by dividing the total number of problems attempted by those completed correctly per day, was highest during the initial baseline condition. With some slight variations, the children's accuracy decreased consistently over the various phases.

On-task behavior

On-task behavior scores were calculated by dividing the number of observations recorded as on-task by the total number of daily observations. Table 1 indicates that the children's on-task behavior, with some vacillation, gradually decreased over the course of the study.

Gain score results

Average student gains equaled 22 and 12 months on the *Gilmore* and *WRAT* tests, respectively. Posttest scores were not available for one student as he ceased attending the project before the test could be readministered.

DISCUSSION

In this study matching and self-regulation procedures were effective in decreasing children's oral reading errors an average of about 3.5 errors per 50 word reading sample as well as in maintaining those gains over time. Similar results were observed for increases and maintenance of gains in number of reading problems attempted as the students nearly doubled their baseline performance levels. Overall however, the preliminary treatments did not effectively maintain either the children's work sheet performance accuracy or their rate(s) of on-task behavior and the children's accuracy in rating their performance decreased throughout the later stages of the project indicating the specificity of the contingency on error reduction. Nevertheless, the children's gain scores, measured by pre-post test administrations of the *WRAT* and *Gilmore* tests were substantial and exceeded expected in-

creases. Although similar gains were not reported in the Turkewitz, *et al.*, (1975) study, this may have been related to the fact that their students were able to falsify their progress in reading tests by looking up the answers.

The extent that positive teacher consequences contributed to the efficacy of self-evaluation with respect to oral reading performance is not clear. However, the children enjoyed the "competitive" aspects of meeting the teacher's assigned error limits as well as being responsible for evaluating their performance, thereby enhancing the effects of the treatments. Nevertheless, it may have been more effective to modify the observation system so that each child's reading behavior consequences could have been more thoroughly monitored. In this way the influence of external variables on the dependent measures could have been experimentally analyzed.

During the latter conditions children's work sheet accuracy and on-task behavior scores decreased unexpectedly. This could probably be attributed to the teacher's failure to consistently detail *specific* goals for the students in these two areas. Unlike the precise specification of goals for oral reading errors and amount of work to be completed, the teacher failed typically to list minimal criteria for accuracy and on-task behavior. The children thus frequently hurried to complete their assigned work, often ignoring the quality of their performance.

As in the Drabmann, *et al.*, (1973) and Turkewitz, *et al.*, (1975) studies, and concluded that the students' inconsistency in accurate self-evaluation appears to be independent of their ability to conform to teacher determined expectations. Our findings suggest that teachers of mildly handicapped children can facilitate accurate student self-management of academic behaviors by assigning goals, and asking students to evaluate their performance and to match an evaluation of their behavior. To maintain accuracy, children can be rewarded for appropriate self-evaluations at intervals. These may be largely faded as tasks become more intrinsically reinforcing.

REFERENCES

Bolstad, O. D. and Johnson, S. M. Self-regulation in the modification of disruptive classroom behavior. *Journal of Applied Behavior Analysis*, 1972, 5, pp. 443-454.

Broden, M., Hall, R. V. and Mitts, B. The effects of self-recording on the classroom behavior of two eighth grade students. *Journal of Applied Behavior Analysis*, 1971, 4, pp. 191-199.

Drabmann, R. S., Spitalnik, R. and O'Leary, K. D. Teaching self-control to disruptive children. *Journal of Abnormal Psychology*, 1973, 82, pp. 10-16.

Frederiksen, L. W. and Frederiksen, C. B. Teacher-determined and self-determined token reinforcement in a special education classroom. *Behavior Therapy*, 1975, 6, pp. 310-314.

Gelfand, A. M. and Hartmann, D. P. *Child Behavior: Analysis and Therapy*. Elmsford, N.Y.: Pergamon Press, 1975.

Gilmore, J. V. and Gilmore, E. C. *Gilmore oral reading test*. New York: Harcourt Brace Jovanovich, 1968.

Gottmann, J. M. and McFall, R. M. Self-monitoring effects in a program for potential high school dropouts: a time series analysis. *Journal of Consulting and Clinical Psychology*, 1972, *39*, pp. 273-281.

Glynn, E. L., Thomas, J. D., Shee, S. M. Behavioral self-control of on-task behavior in an elementary classroom. *Journal of Applied Behavior Analysis*, 1973, *6*, pp. 105-113.

Jastak, J. F., Bijou, S. W. and Jastak, S. R. *Wide Range Achievement Test*. Wilmington: Guidance Associates, 1965.

Kaufmann, K. R. and O'Leary, K. D. Reward, cost and self evaluation procedures for disruptive adolescents in a psychiatric hospital school. *Journal of Applied Behavior Analysis*, 1972, *5*, pp. 293-309.

Parker, D. H. *Reading Laboratory Kit—IC*. Chicago: Science Research Associates, 1973.

Riddle, S., and Peters, L. *Practice Exercises in Basic English*. Elizabethtown, Penn.: Continental Press, 1976.

Stone, C. R., Grover, C. C. and Anderson, D. G. *New Practice Readers*. New York: McGraw Hill, 1962.

Sullivan, M. W. *Reading*. Palo Alto, California: Behavioral Research Laboratory, 1969.

Turkewitz, H., O'Leary, K. D. and Ironsmith, M. Generalization and maintenance of appropriate behavior through self-control. *Journal of Consulting and Clinical Psychology*, 1975, *43*, pp. 577-583.

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Mainstreaming Behaviorally Disordered Children Through Teacher Consultation

C. Michael Nelson and Kay B. Stevens

INTRODUCTION

Since the public mandate to re-integrate handicapped children with their normal school peers went into effect in 1975, mainstreaming has become a common part of our educational jargon. However, it would be stretching the point to say that mainstreaming is a popular idea. *PL 94-142* directs that all handicapped children be educated in the least restrictive environment. For the vast majority of mildly and moderately handicapped children, this means the regular classroom. Identified exceptional children placed in regular classrooms for part or all of the school day are said to be "mainstreamed." But are they? Unless such children also receive an *appropriate* educational program, *i.e.* are suited to their unique learning needs, the answer is no. By this criterion, it is inappropriate to claim that the majority of handicapped children placed in regular classrooms are being mainstreamed.

Children labeled behaviorally disordered or emotionally disturbed represent one subgroup of the population of handicapped children. However, our position is that this label—in fact, *any* disability label—serves no purpose if the educational objective is to integrate such children into the regular school environment. As Pugach (1979) pointed out, the fundamental challenge of *PL 94-142* is to provide an ". . . education which is responsive to the individual needs of all students. . . ." Affixing labels to some children, especially labels as stigmatizing as "emotionally disturbed," greatly impede the processes through which this challenge may be met. Our contention is that mainstreaming will not succeed unless it occurs in the context of an educational delivery system in which individual instructional programs are tailored for children on the basis of their needs, rather than their qualifications for a disability label.

Philosophically, educators are in substantial agreement regarding the desirability of such a delivery system; but practically, they raise numerous objections. The principal obstacles seem to include: (1) the practice of funding special-education programs on the basis of numbers of handicapped children identified, labeled and due processed; (2) the prevailing "two box theory" (Reynolds and Birch, 1977), which perpetuates two curricular tracts: one "special" and individualized, the other "regular" and nonindividualized; (3) the tradition of providing "special" education in separate isolated locations which has kept much of the technology of individualized instruction

out of the hands of regular educators; (4) failure to hold regular (and, to an alarming extent, special) educators accountable for individual child progress; and (5) the lack of available support services and relevant inservice training for regular classroom teachers.

In spite of these obstacles, a few alternative delivery systems have been developed and have operated effectively for a number of years. For example, Vermont's Consulting Teacher program (Christie, McKenzie, and Burdett, 1972; Knight, 1978; McKenzie, Egner, Knight, Perelman, Schneider, and Garvin, 1970) has functioned successfully for 10 years. Any child failing to meet minimum educational objectives at any given point may be served, as funding is based on the service and not the number of handicapped children identified. Furthermore, the consulting teacher serves children and teachers in the regular classroom: individualized programs are established, teachers are trained in individualized instructional technology through inservice programs operated by consulting teachers, and child progress is systematically monitored and used as a basis for program evaluation. Blankenship and Lilly (1977) and Deno and Mirkin (1977) have developed similar models, and are training special education personnel to function in a supportive role to mainstream teachers and pupils.

The primary advantage of this delivery system is that it reduces the distinctions between regular and special education, and, therefore, there is less tendency to refer children who present difficult instructional problems to specialized programs away from the mainstream. The focus of services is on problem-solving by regular classroom teachers with the support of special education personnel. Our belief is that a special education delivery system emphasizing problem-solving consultation, inservice teacher training, and individualized educational programming is needed in order for mainstreaming to succeed (*i.e.* to make the mainstream flexible and adaptable to the needs of all children). This paper describes a consultation delivery system which has been pilot tested in a public elementary school for two years. Case outcome and time expenditure data also are reported.

PROCEDURES

Our operating procedures have been described in detail elsewhere (Marotz-Sprague and Nelson, 1979); therefore, here they will only be presented briefly. During our first year, consultation was offered two full days a week the first semester and three days a week the second semester. Throughout our second year, consultation services were available twice each week. Five consultants were involved in the project over the two-year period. Typically, only one consultant was present in the building on any given day. Each consultant assumed primary responsibility for a certain number of cases, but all consultants assisted one another in following up on cases. Each consultant maintained a log of his/her time and activities, in addition to recording data pertinent to case management and evaluation. In most instances, a "case" consisted of an individual child; in other, it was an entire class.

The consultation process is presented in *Figure 1*. An informal referral by teachers, principal, counselor, or other school personnel initiated consultation services. Referral meetings usually consisted of a brief discussion of a particular child experiencing problems in school. This was followed by a

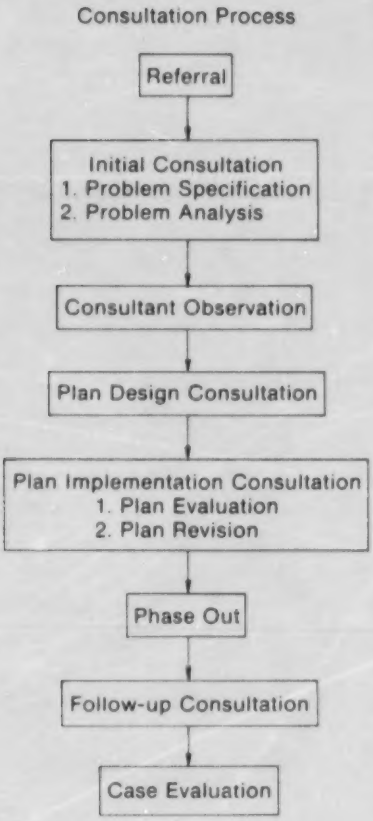

FIGURE 1

more formal initial consultation meeting between the consultant and referring teacher in which a case was opened on the child and specific problems were pinpointed and defined. The consultant typically then spent time in the classroom or any other school setting where problems were occurring to observe actual behaviors. The observation phase was followed by another meeting between the teacher and consultant in which an intervention strategy was designed, and data collection procedures were developed. The consultant then made him/herself available to the teacher to assist in implementing the intervention strategy. As the referring teacher became comfortable and competent in implementing the intervention strategy, the consultant phased out services. Follow-up consultation consisted of reviewing progress with the referring teacher and possibly collecting follow-up data on specific target behaviors. Any necessary adjustments in the intervention plan were made during the follow-up phase. At the end of consultation each case was evaluated.

Near the completion of the two-year project, consultants began using consultation report forms which served as an IEP for consultation. These forms
152 were adapted from Deno and Mirkin (1977) for our own use. The forms pro-

vided ongoing documentation and a written summary of consultation activities. Copies of the form may be obtained by writing the first author.

The consultation process was evaluated from two perspectives: (1) the success or failure of each case, and (2) the specific allocation of the consultant's time among various activities. Evaluation of outcomes was based on three sources of information: (1) program certification, (2) data collected by the consultant or teacher, and (3) teacher evaluation. Program certification indicated whether terminal objectives were met or closely approximated and whether there was a need to continue support services. Data collection provided documentation of actual behavior changes in selected target behaviors. Teacher evaluations, obtained via structured questionnaires, provided information regarding teacher opinion of the consultation process. Evaluation categories included "success," which was defined as all three criteria being met (terminal objectives reached or closely approximated, target behavior data indicated success, and a positive teacher evaluation), "Partial Success," defined as two of these three criteria being met, and "Failure," meaning that less than two of the criteria were met.

The time expenditure recording system was developed in order to determine the cost of consultation. Each activity and time expended per activity were logged and kept in case folders. This enabled consultants to see exactly the amount of time spent on each case, as well as the time expended in the delivery of particular services.

RESULTS

Table 1 results presents a breakdown of service categories and total time spent per category. As the data indicate, most consultation services were indirect (*i.e.* involved working through the teacher rather than directly with the child). A slight increase in direct services during the 1978-79 year was attributed to more serious consultation problems presented by students (and in some cases, teachers). A large percentage of time was spent in administrative and record-keeping activities due to our interest in researching and developing the consultation model. This time expenditure would not be as great for those not involved in such research. However, any consultant should expect to spend a fair amount of time in record keeping and daily planning.[1]

During the 1977-78 school year, we provided consultation for 25 cases, with 15 successes, eight partial successes and two failures (see *Table 2*). *Table 3* displays case data for the 1978-79 school year. For that year, our cases were divided into two categories—formal and informal. Formal cases refer to consultation involving the development of formal program plans. Informal cases refer to consultation involving brief discussion with teachers or other school personnel where suggestions were made by the consultant, but no formal program plan was developed.[2] Only formal cases were evaluated against the criteria described above. Of the 13 formal cases, eight were successes, four were partial successes and one case was evaluated as a failure.

[1] A further breakdown of services, including the specific activities which made up the consultation categories presented in Table 1, was performed, with time expenditures monitored for each activity. These data have not been included in the present report in order to save space.

[2] To save space, informal case outcome data have not been included in this report.

TABLE 1
Alocation of Consultation Services

	1977–78		1978–79	
	Time*	Per-cent	Time	Per-cent
Direct Services				
In Regular Classroom	717	5.0	1,610	10.1
In Alternate Setting	192	1.3	0	0
Indirect Services				
Consultation	4,475	31.4	4,305	26.9
Observation	1,896	13.3	1,991	12.4
Meetings	2,720	19.1	3,419	21.4
Preparation and Planning	1,844	12.9	1,676	10.5
Administration	2,400	16.8	2,525	15.8
Supplementary Services	32	.2	465	2.9
Total	14,276 (237.9 hrs.)	100%	15,991 (266.5 hrs.)	100%

* Time reported in minutes.

DISCUSSION

The data indicate that teacher consultation is both an effective and a useful service for mainstream teachers and children. Our experience over the two year period also demonstrated to us that there is a need for professionals working in this role in the public schools. However, teacher consultation is not simple: in many respects, it is easier to change children than adults. It is tempting to revert back to the delivery of services directly to children rather than working through their teachers; but, if consultation is to have an impact on the educational mainstream, regular classroom teachers must learn new skills. While in a few cases we were obliged to work directly with pupils, we feel that even then techers acquired new skills, through our modeling, which they generalized to solving other instructional problems on their own. This conclusion is partially based on the reduced number of cases during 1978–79 requiring formal intervention, which presumably reflects an increase in teachers' independent probem-solving skills. As mentioned earlier, we conducted a workshop on the principles of applied behavior analysis for the school staff. After the workshop, two teachers implemented classroom management program which required no formal input from the consultants during the remainder of the school year.

The variables influencing the success of consultation have been described in an earlier report (Marotz-Sprague and Nelson, 1979). To reiterate, these include a receptive principal who is interested in staff development; a school climate which supports open communication and shared problem-solving; the availability of consulation services for all children, not just those identified as handicapped; the use of a written plan; and the reliability and

TABLE 2

Case Analysis (1977-78)

Case	Presenting Problem	No. of Services	Distribution of Consultation Time		Evaluation
			(*Minutes & Percent*)		
1	4th grade male. No working, poor reader difficulty copying, inappropriate peer interaction.	64	1,104	7.7%	Success
2	5th grade class. Inappropriate behaviors.	8	167	1.2%	Success
3	2nd grade male. Not completing work or following directions.	51	670	4.7%	Partial Success
4	3rd grade male. Not completing independent written work.	34	670	4.7%	Success
5	3rd grade male. Work not complete.	28	169	1.2%	Success
6	2nd grade male. Talking to self and objects.	5	35	0.2%	Success
7	2nd grade male. Work not complete.	70	827	5.8%	Partial Success
8	3rd grade male. Work not complete.	33	380	2.7%	Failure
9	2nd grade male. Poor work habits, sloppy and inaccurate work, not following directions.	35	482	3.4%	Success
10	2nd grade male. Off task, poor achievement.	20	340	2.4%	Partial Success
11	4th grade male. Work not complete.	8	75	0.5%	Success
12	3rd grade female. Work not complete, stealing.	22	170	1.2%	Success
13	3rd grade male. Illegible handwriting.	7	195	1.4%	Failure
14	3rd grade female. Work not complete.	52	417	2.9%	Success
15	2nd grade class. Work not completed or inaccurately done.	22	475	3.3%	Partial Success
16	6th grade female. Not participating in music.	3	45	.3%	Success

TABLE 2 *(Continued)*

17	5th grade male. Crying, getting sick, avoiding gym.	13	250	1.8%	Success
18	2nd grade male. Work not complete, off-task, not wearing glasses, inappropriate behavior.	23	388	2.7%	Success
19	3rd grade male. Help in determining if ready for full-time regular placement.	5	85	.6%	Success
20	6th grade male. Poor interpersonal relations, making noises, not working.	17	235	1.6%	Partial Success
21	3rd grade male. Work not complete, poor spelling.	48	467	3.3%	Partial Success
22	4th grade class. Off-task, inattentativeness, work materials not ready.	38	443	3.1%	Partial Success
23	3rd grade male. Work not complete.	61	762	5.3%	Partial Success
24	Kindergarten male. Off-task, disruptive, doesn't follow directions.	18	285	2.0%	Success
25	6th grade female. Inappropriate verbal behavior.	3	20	.1%	Success
	TOTAL		9,156	64.1%	

TABLE 3
Case Analysis (1978-79)

Case	Presenting Problem	No. of Services	Distribution of Consultation Time		Evaluation
			(*Minutes & Percent*)		
1	5th grade male. Not completing daily written assignments.	51	658	4.1%	Failure
2	3rd grade male. Talking out in class, pestering teacher and other children.	35	232	1.5%	Success
3	4th grade male. Not completing assignments and disruptive behavior in the classroom.	28	210	1.3%	Success
4	2nd grade male. Not completing assignments, off-task, and refusing to take time outs.	93	915	5.7%	Success
5	4th grade male. Not completing assignments.	72	581	3.6%	Success
6	1st grade male. Disruptive behavior, pestering other pupils.	49	367	2.3%	Success
7	3rd grade male. Assignments incomplete and inaccurate.	67	671	4.2%	Partial Success
8	Kindergarten female. Physical aggression toward other children. Disruptive out-of-seat and talking out.	110	2,353	14.5%	Success
9	4th grade male. Written assignments not completed.	39	292	1.8%	Success
10	4th grade male. Written assignments not completed.	77	831	5.2%	Partial Success
11	4th grade class. Written assignments not completed or turned in.	39	329	2.1%	Partial Success

TABLE 3 *(Continued)*

12	3rd grade math class. Math assignments not completed.	34	440	2.8%	Success
13	4th grade math class. Have not memorized multiplication facts.	24	345	2.2%	Partial Success
	(Formal Total)	718	8,224	51.3%	
	(Informal Total)	129	1,399	9.1%	
	TOTAL	847	*9,623*	*60.4%*	

skill of consultants. To this list we should add that we essentially had a "same day" treatment package; that is, we could develop an intervention plan on the same day we received the referral, if the teacher had a few minutes on a couple of occasions during the day. Obviously, we could not function as expeditiously if our cases had to be due processed. We cannot emphasize strongly enough that if the mainstream is to become more adaptable to individual differences among children, then support services must be available to teachers for all children, not just those identified as handicapped.

In addition, consultants should have skills for dealing with a number of resistances—personal, as well as institutional. Having to deal with teachers and administrators who do not believe a child is salvagable, who do not wish to put forth the effort required to implement a complex intervention, or who lack the patience to try yet another approach after several previous efforts have failed, tax both the technical and interpersonal skills of the professional delivering consultation. Institutional resistances include long-standing school policies and practices, such as only one basal reading series, requiring children to proceed lock-step through instructional materials, and assigning pupils to classes on the basis of arbitrary criteria.

To deal with these problems, the consultant needs to be competent as a change agent. However, first he/she must have a formal role in the school. We lacked the authority to hold teachers accountable and to require commitments to change. Therefore, we had to rely almost exclusively on social reinforcement to keep teachers going, or suggestions to the principal that a particular teacher deserved commendation, or should be closely supervised. We also felt, during our second year, that because we were not employed by the schools, we lacked a position in the "pecking order," and were beginning to threaten the power structure among both administrative and teaching staff. Having a legitimate, formalized role would reduce these problems. We also recommend that consultants have supervisory authority, if possible, to increase the probability that teachers would feel an obligation to follow up on consultant's suggestions.

Finally, we recommend that any delivery system, and particularly one which is experimental, should be carefully evaluated. The coding system we developed is one way to assess and describe the uses of consultant's time. By combining this information with case outcome data, one can evlauate the cost-efficiency of case consultation. It is unfortunate that equivalent data is not available on other intervention models, as this would permit direct comparison of program efficacy.

REFERENCES

Blakenship, C. S., and Lilly, M. S. Essentials of special education for regular educators. *Teacher Education and Special Education*, 1977, *1*, pp. 28-35.

Christie, L. S., McKenzie, H. S., and Burdett, C. S. The consulting teacher approach to special education: Inservice training for regular classroom teachers. *Focus on Exceptional Children*, 1972, *4* (5), pp. 1-10.

Deno, S. L., and Mirkin, P. K. *Data-based program modification: A manual.* Minneapolis: Leadership Training Institute/Special Education, 1977.

Knight, M. F. Vermont's consulting teacher model for inservice training of educational personnel. In C. M. Nelson (Ed.) *Field-based teacher training: Applications in special education.* Minneapolis: Advanced Institute for Trainers of Teachers for Seriously Emotionally Disturbed Children and Youth, Department of Psychoeducational Studies, University of Minnesota, 1978. pp. 113-127.

Marotz-Sprague, B., and Nelson, C. M. The inservice consultant: A role for teacher trainers working with behavior disorders in the schools. In R. B. Rutherford, Jr. and A. G. Prieto (Eds.). *Monograph in Behavioral Disorders: Volume II.* Reston, VA: Council for Children with Behavioral Disorders, 1979, pp. 24-37.

McKenzie, H. S., Egner, A. N., Knight, M. F., Perelman, P. F., Schneider, B. M., and Garvin, J. S. Training consulting teachers to assist elementary teachers in the management of handicapped children. *Exceptional Children*, 1970, *37*, pp. 137-143.

Pugach, M. C. Education for the handicapped: Are we making any progress? *Education Unlimited*, 1979, *1* (4), pp. 11-14.

Reynolds, M. C., and Birch, J. W. *Teaching exceptional children in all America's schools.* Reston, Virginia: Council for Exceptional Children, 1977.

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A Simplified Contingency System for Establishing and Maintaining Classroom Control in Students Labeled Emotionally or Socially Maladjusted

Clint Van Nagel, Robert Siudzinski, and Sharian Deering

INTRODUCTION

The primary purpose of this particular token system is to present a classroom management system which can bring a classroom under control with a minimum of teacher time and effort. This following system has been used in departmentalized classrooms, resource rooms, regular classrooms and classes for students labeled emotionally disturbed or socially maladjusted.

The power of token economies to bring disruptive student behavior under control and to increase pupil achievement has been demonstrated. (Baer, Wolf, 1968; Birnbrauer and Lawler, 1964; Birnbrauer, Bijou, Wolf and Kidder, 1965; Birnbrauer, Wolf, Kidder and Tague, 1965; Karraker, 1977; McKenzie, Clark, Wolf, Kothera, Benson, 1968; Oleary and Becker, 1967; Oleary, Becker, Evans, and Saudargas, 1969; Osborne, 1969; Quay, Werry, McQueen and Sprague, 1966).

There is a need for a simple token economy classroom management system that teachers can use to effectively manage a classroom with a minimum of effort and instruction. This simplified system would eliminate: (1) complicated record keeping, such as cycle charts and behavioral designs; (2) the extra work which necessitates additional personnel, *i.e.*, aides, volunteers, etc., and (3) additional teacher time. Such a system should not only increase academic achievement but should also reduce disruptive student behaviors.

After a thorough review of the literature, several systems were synthesized and an operational plan was devised to create a simple system that would meet the above criteria The Student Accomplishment Record (SAR) was created, tried, and modified over a period of five years until it reached its present state.

While it is recognized that there has been a great deal of research on token economies, the strength of this approach lies not only in its simplicity, but

also in the verification of its effectiveness. Over 700 classroom teachers in various settings with various types of students have demonstrated the system's effectiveness. The data supplies by classroom teachers regarding the SAR gives overwhelming support to the functional utility of this direct approach. The data indicate a functional relationship between SAR and an increase in desirable behavior and achievement.

SAR DIFFERENTIATING ASPECTS

The following aspects differentiate SAR from other classroom management systems:

1. It does not require sophisticated teacher training;
2. It does not require much teacher training time; most teachers learn the technique in an average of four hours;
3. It can be immediately established in any school;
4. It is inexpensive;
5. It is applicable to all types of students in special and regular education classrooms;
6. In most cases, the same plan can be used to solve the majority of a student's behavior and/or academic problems;
7. It does not place an undue burden on the teacher's instructional time;
8. The students evaluate and record their own behavior, thereby creating a condition of self-evaluation;
9. The teacher confirms or refutes the student's self-evaluation;
10. The system can be faded with a minimum of effort;
11. Multiple schedules can be operating at one time;
12. It lends itself to student individualization and different teaching styles;
13. It can be used with one student or with an entire class;
14. Students can select their own back-up reinforcers; and
15. It can be generalized into a home situation.

METHOD

Subjects

Through the years 1974 to 1980, a high percentage of teachers of the emotionally disturbed in the northeastern part of Florida were not certified teachers of that exceptionality. To illustrate, in one of the largest counties of this area approximately 60% of the teachers were not certified to teach students labeled emotionally disturbed but were teaching in such classes. One of the greatest problems of these teachers was how to quickly and efficiently manage disruptive bahavior in their classrooms until they could attend university classes to learn specialized techniques. To meet this need the Student Accomplishment Record was created.

Procedure

The procedure for instructing the teachers was prepared in written form and given to the teachers after the system was orally explained to them. Although the teachers were instructed to use the token system with their en-

tire class, they were specifically instructed to chart the behavior of one student over a four-week period using an ABAB behavior design or multiple baseline design. Instructions and a handout detailing each step of the procedure were given to each teacher. Most of the teachers received this instruction in workshops requested by school districts through one-day workshops arranged through the Teacher Education Center or Continuing Education Center at the University of North Florida in Jacksonville, Florida.

Procedural Handout Description

The handout that was given to the teachers is presented verbatim below. Along with this handout a workshop demonstration was given.

Step 1: Duplicate the Student Accomplishment Record (*Figure 1*). Make about 16 copies for each student. This will be enough for approximately half of the school year, if done on both sides.

Name_____

Student Accomplishment Record

In order to earn rewards or time in the free time area, you must earn points. Points can be earned by doing the following:

	Mon.	Tues.	Wed.	Thurs.	Fri.
1. I was in the classroom in my seat before the last bell rang. (1 point)					
2. I had a pencil and paper for class. (1 point)					
3. I did not leave my seat without permission. (4 points)					
4. I started my work immediately when it was given to me. (2 points)					
5. I finished the work that was given to me. (4 points)					
6. 80% of the work given to me was correct. (4 points)					
7. I did not speak in class without raising my hand and getting permission. (4 points)					
	+	+	+	+	

Grand Weekly Total=_____

Ways of Losing Points

1.	Striking or pushing another student.	Lose all points
2.	Defacing school property.	Lose all points
3.	Cheating	Lose all points
4.	Arguing with the teacher over points.	Lose all points

FIGURE 1
Student Accomplishment Record

Step 2: Record the names of each student on manila folders in your classroom and place the SAR in each folder. Put the folders in a cardboard box on a table near your classroom entrance, or put them in a manila envelope which is stapled to the bulletin board by the door. Later you will explain to the students that when they enter the classroom they are to pick up their SAR and deposit it in the box or manila envelope upon leaving the classroom. Students must be held accountable for obtaining the SAR form themselves to develop self-responsibility behaviors.

Step 3: Before explaining the system, ask the students what privileges or activities they would like in the classroom. List their suggestions on the chalkboard. Add a few suggestions such as no homework over the weekend, free time in class, etc. Narrow the choices for the week down to approximately five or six. Do not use too many reinforcers per week as they can become unwieldy and time-consuming. Record the reinforcers or rewards on a reward menu or special place on the chalkboard where all the students can see it. For ideas, refer to the Reinforcement Menu in *Appendix A*.

Step 4: (optional) Take three minutes and use the Van Nagel Interest Inventory to determine the student's interests (see *Appendix B*). The student's interests can be converted into reinforcers. An additional advantage of using the inventory is that you can use student interests to establish rapport and then interweave them into instruction for motivational purposes.

Step 5: Explain to the student that in the real world of work, people have to do certain things in order to get other things they want; *i.e.*, labor for money, privileges, etc. Explain to the students that you are going to give them an opportunity to get the rewards or reinforcers they want or like by doing things that are normally expected of them in school. Now explain the system in this way:

A. Instruct a student to pick up her/his folder from the box (Student Accomplishment Box), or manila folder that has her/his name on it and go to her/his seat. Have the rest of the students do this individually.
B. Once the students are seated, explain the Student Accomplishment Record to them. Have the students look at the Student Accomplishment Record in their folders. Explain to the students that they can earn points for rewards by earning checkmarks. Checkmarks can be earned by doing the following:
    1. If the student was in the classroom before the last bell rang, he/she is to place the number in the appropriate box; *e.g.* If the day were Monday, the student would place one in the first box under Monday.
    2. If the student had a pencil and paper for class, she/he is to place the number one in the appropriate box under Monday.
    3. If the student did not leave her/his seat during the designated time, she/he is to place the number four in the appropriate box. If the student had to be reminded to stay in her/his seat, a point is subtracted for each occurrance.
    4. If the student started working immediately when assigned a task, she/he is to place the number four in the appropriate box. If the student had to be reminded to begin a task, a point is subtracted for each occurrence.

5. If the student completed the assigned work, she/he is to place the number four in the appropriate box. For each task the student did not finish, one point is subtracted.
6. At the end of the class if the student has completed 80 percent of the work correctly, she/he is to place a number four in the appropriate box, if 70 percent of the work was correct; three points are placed in the box; if 60 percent are correct, two points; if 50 percent are correct, one point is marked.
7. If the student did not speak in class without raising her/his hand, she/he is to place the number four in the appropriate box. The student is to subtract a point for each time he or she was reminded to keep quiet or stop talking.
    a. To minimize work, provide students with an answer key to check their academic work. Inform them that if they cheat or debate points, they lose all their earned points up to that time (see *Figure 1*).
    b. Tell the students that they will evaluate themselves at the end of each class period. When you tell them to take out their SAR and self evaluate, they have one minute to do so. Inform the students that approximately two minutes before the end of the class, you will come to each student's desk (or you may have each student come to your desk with their SAR) and you will either agree or disagree with the student's self evaluation. The teacher's agreement will be noted by a slash through the appropriate boxes. If the teacher disagrees with the student's self evaluation an "X" will be entered in the box/area of disagreement and the teacher will enter the adjusted number of points. After the teacher has confirmed or refuted the student's evaluation, the student then totals up his/her points. Emphasize that no discussion regarding disagreement between the teacher's observations and the student's observations can occur at that time.

        If a discussion occurs between the teacher and the student, the student loses all points for the time period. It is permissible to allow a student to discuss a disagreement during recess or after school. The student must request this in writing. Re-emphasize that students lose all points for cheating, striking another student or defacing school property (see *Figure 1*).
    c. After the teacher confirms or refutes the student's self evaluation, the student is instructed to return her/his SAR to the SAR box or appropriate manila folder.
    d. After explaining the SAR to the students, ask them if there are any questions.

Step 6: At this point, the teacher explains that at the end of the week on Friday afternoon, the students will total up their points and make selections from the reinforcement menu dependent upon the points they have earned.

The teacher should inform the students of the day and time period they may obtain or use their reinforcers for reward. This usually occurs on the following week. In some cases, with impulsive, emotionally disturbed, or very young students, it may be necessary to make exchanges after a task is completed or at a specified time period every day. As the students develop control, the teacher should extend the time period between reinforcement exchanges to help develop delay of gratification.

A. Prior to this, the teacher should have determined the number of points each reward/reinforcement is worth. At first, make it easy for the student to obtain the reinforcements. Later you will increase the number of points required for reinforcements (inflation), and vary the reinforcers to keep student interest optimum. It is generally best to change reinforcers every two weeks. It is realized that this is, in effect, punishing the student for achievement, but by the same token, it more closely approximates the increasing demands society will place on the student with increasing age and maturation.
B. *Optional* There is an alternate procedure which uses only one reinforcement menu. This menu keeps points the same and does not utilize inflation. In order to do this, the range of points between the value of the lowest item and the highest item on the reinforcement menu must be made large from the very beginning of the program. This wide range of points permits the student to earn more desirable rewards as he works harder, thereby eliminating inflation, which can inadvertently be perceived by some students as penalizing good behavior.

Step 7: Tell the students that each week a blank Student Accomplishment Record will be placed in their folders and the class will continue to follow the same procedures.

FADING THE SYSTEM

When the target behaviors of the SAR have become habit to the student, the teacher should then begin to fade the system. This should be done slowly. From the beginning, the teacher should pair up verbal praise with the reinforcers as they are awarded. Later verbal praise alone will serve as a reinforcer for desirable behaviors.

If you are not using the alternate procedure with a wide point range, begin slowly to increase the points per privilege as the behaviors on the SAR become habit. Following this, vary the days that the SAR is to be used. Finally, when the student's behaviors are consistent with those on the SAR and the disruptions are at a minimum, they will no longer have to use the SAR.

It is important to note that in the fading process, the teacher should strive to make it more reinforcing to be off the program than on it. This can be accomplished by phasing out the students who have acquired the behaviors in sufficient strengths to no longer need the support of the system. For example, if a student has earned a minimum of 115 points for three consecutive weeks, he/she is taken off the system and automatically credited with the 126 total points per week thereafter. If the student starts to disrupt the class or fails to maintain his prior academic performance, the student goes back on the SAR. In essence, students work to get off the system.

REASONS SYSTEM WORKS

1. It strengthens behaviors that are incompatible with disruptive and non-task related behaviors in the classroom. If a student is sitting in her/his seat, doing work, and not talking, it is unlikely that she/he will be getting into trouble.
2. It shapes desirable behaviors through points earned.
3. It punishes undesirable behavior through points earned.
4. Self-evaluation continually takes place.
5. Students can see the gradual point increases of the desired behaviors on their Student Accomplishment Record.
6. After a while, the student's behavior can become habit and generalize to other situations.
7. It teaches students to delay gratification.
8. It simulates the real world of work. (A student's parents often exhibit similar behaviors in the real world of work. For example; (1) parents must be at work on time; (2) have their tools for work; (3) start work at a specified time or when a bell or buzzer sounds; (4) finish work that is given to them; (5) do the work with a certain amount of quality; and (6) give everyone a chance to speak.
9. It gives the students an incentive to work.
10. It forces the teacher to become aware of the student's entering behavior and to reinforce desirable behaviors. (This is done by noting whether the student can realistically achieve 80 percent of the work given to her/him.)
11. It forces the teacher to give daily feedback to the student when the teacher has to confirm or refute the self evaluations.
12. Work responses are rewarded equitably.

DATA COLLECTION

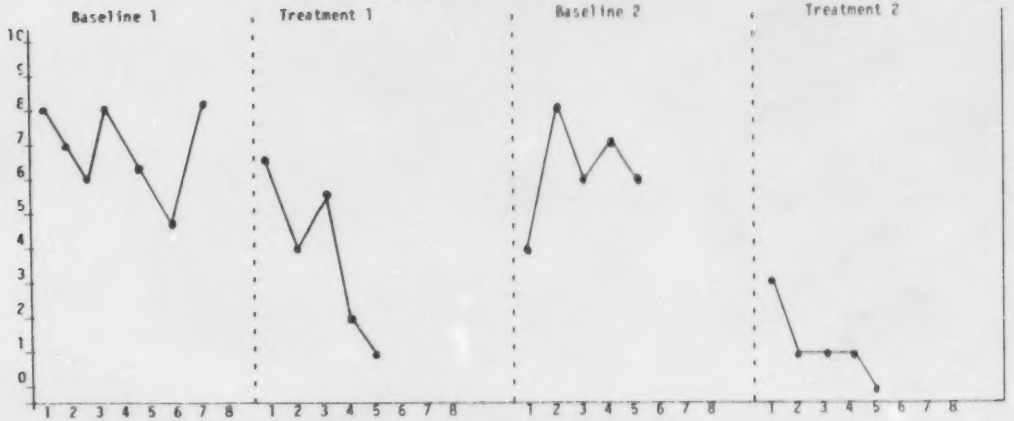
It would be impossible to present all the data collected on the SAR at this point in time. Below are three randomly selected studies that are representative of the effectiveness of the Student Accomplishment Record.

In each case the undesirable behavior was observed and charted for five or more days (see *Baseline 1* on *Figures 2, 3, 4*). The Student Accomplishment Record was instituted and the undesirable behavior decreased (see *Treatment 1* on *Figures 2, 3, 4*). The Student Accomplishment Record was withdrawn and an increase in the undesirable behavior was noted (see *Baseline 2* on *Figures 2, 3, 4*). The treatment, Student Accomplishment Record was reinstituted and the undesirable behavior decreased (see *Treatment 2* on *Figures 2, 3, 4*). As that behavior became internalized the system was faded.

DISCUSSION

The present token system, SAR or Student Accomplishment Record, is a viable, effective, and efficient approach for the new teacher of children labeled socially or emotionally disturbed or the veteran teacher of socially and emotionally disturbed. It can be modified to accomodate different types of situations and different time periods. The authors invite others to share with them any research and/or experiences with the system including modifications or improvements to it.

Case 1:
Student Accomplishment Record



Specific Problem: Student is socially disruptive-- talks out without permission.

Student: Johnnie

Age: 15

Type of class: Emotionally handicapped, resource room

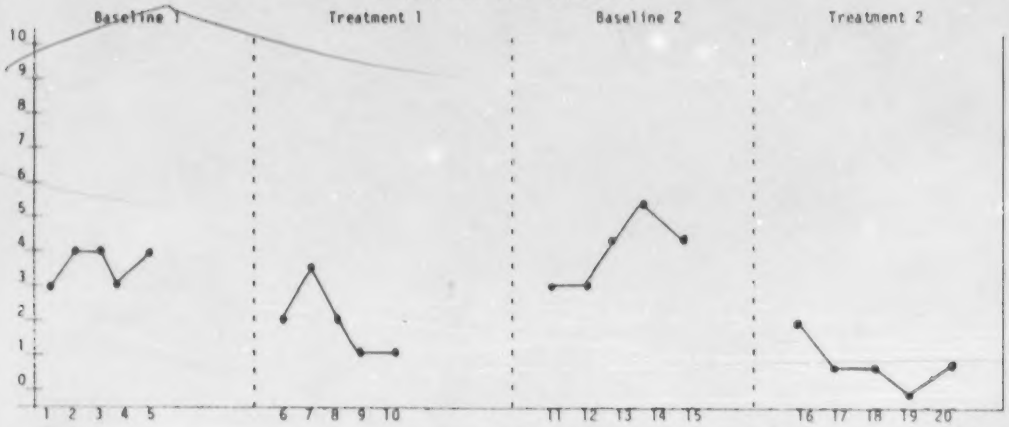
Reliability Check: Day 2=91%; 6=94%; 11=86%; 16=87%; 20= %; 25=89%

Research Teacher: Len Ash

Date: Winter, 1979

Case 2:

Student Accomplishment Record



Specific Problem: Student hits other students.

Student: Michael

Research Teacher: Nancy Dorsey

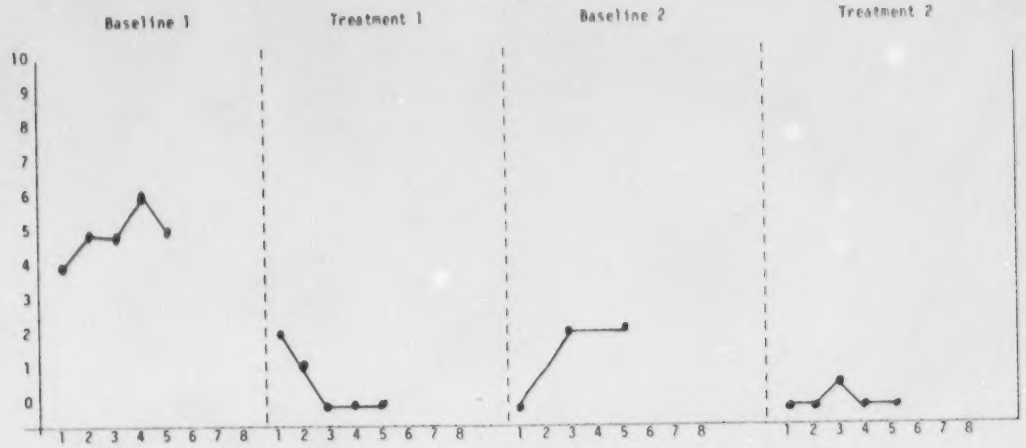
Age: 7

Date: March, 1977

Type of Class: Resource Room, math & reading Instruction

Realibility Check B1=92%, T1=90%, B2=94%, T2=91%

Case 3:
Student Accomplishment Record



Specific Problem: Student is physically and verbally abusive--he hits other children.

Student: Rusty

Age: 9

Type of Class: Institution

Realibility Check: 90%

Research Teacher: Toni Kaufman

Date: Winter, 1979

Appendix A: *Reward or Reinforcement Menu*

Directions: Permit students to suggest five reinforcements per week for which they would like to work. Make sure the reinforcements vary from a small number of points to a large number of points. Change the menu each week to prevent satiation. List the rewards selected on the chalkboard.

1.0 Primary Reinforcers
- 1.1 touch
- 1.2 hugs
- 1.3 movement

2.0 Secondary Reinforcers (no expense to the teacher)
- 2.1 teacher praise
- 2.2 project
- 2.3 field trips
- 2.4 free time
- 2.5 "be the teacher"
- 2.6 class leader
- 2.7 more movies
- 2.8 work at own rate
- 2.9 daily responsibilities
- 2.10 recess
- 2.11 listening to music
- 2.12 using felt-tip pens
- 2.13 play in interest center
- 2.14 painting
- 2.15 use chalkboard
- 2.16 tokens
- 2.17 special duties
- 2.18 select seat mates
- 2.19 stickers, stars
- 2.20 extra library
- 2.21 use of toys brought from home
- 2.22 peer control
- 2.23 line up first
- 2.24 other teachers' approval
- 2.25 no homework
- 2.26 advance to higher group
- 2.27 extra physical activities
- 2.28 longer recesses
- 2.29 public graphing
- 2.30 daily report card
- 2.31 peer recognition
- 2.32 pat on back
- 2.34 attention for appropriate behavior
- 2.35 use of school materials
- 2.36 run errands
- 2.37 attendance certificates
- 2.38 displaying good work
- 2.39 be on committee
- 2.40 help clean room

2.41 reading comics (brought from home)
2.42 playing chess, checkers, etc.
2.43 drawing
2.44 playing tic-tac-toe (brought from home)
2.45 playing with tinker toys, dominoes, etc. (from home)
2.46 taking class roll
2.47 cleaning teacher's desk
2.48 using overhead projector
2.49 erase chalkboard
2.50 watering plants
2.51 helping in cafeteria
2.52 operate filmstrip projector
2.53 free time to be left alone
2.54 work on puzzle
2.55 work on car part
2.56 use phonograph with earplugs or radio or tape recorder brought from home
2.57 play cards with a friend
2.58 take class pet home for weekend
2.59 have work displayed
2.60 sit next to teacher
2.61 Green Stamps
2.62 read book of choice
2.63 note or praise sent home
2.64 lavatory pass
2.65 extra drink of water
2.66 student suggestion

Appendix B: *Van Nagel Quick Interest Inventory*

Directions: The interviewer should be sure to let the students know that this interviewing inventory is designed to help the interviewer know and understand the student better. It is also designed to find out what the person's interests are and what is reinforcing to the person. The interviewer should tell the student that there are no right or wrong answers to the questions. The answers are unique to the individual. The interviewer should write the answers given by the student under the questions or on a separate sheet of paper. The interviewer should feel free to further question the student about the answers given to the questions. The idea is to evoke information concerning interest patterns and reinforcement preferences of that student. The interviewer should read verbatim to the student the following questions:

1. Name three things that make you happy.
2. Name three things you like to do in your spare or free time.
3. Name three things you like to buy.
4. What games do you like?
5. Who do you like to be with? Why?
6. Do you have any hobbies?
7. Do you belong to any clubs or organizations?
8. Do you watch television? What programs?

9. Do you go to the movies? What type of movies do you like best?
10. Do you listen to the radio? What radio programs do you like best?
11. Do you read books, magazines, or the newspapers?
    a. What type of books or stories do you like?
    b. Do you have any books of your own?
    c. What type of magazines do you like to read?
    d. What sections of the newspapers do you like best?
12. Do you like to have someone read to you? If so, what would you like read to you?
13. What did you like to do when you were very young? (Would you like to do this now?)
14. Do you have any pets? Would you like a pet? What kind?
15. What have you been interested in lately?
16. What school subjects do you like the best? Why?
17. What school subjects do you like the least? Why?

At this point the interviewer should look over the responses for patterns of interest and potential reinforcers and answer yourself the following questions. The answers should be recorded on a separate sheet of paper.

A. Does the Questionnaire show a pattern of interests? If so, group them.
B. Are there any interests that appear to be sustaining? Star those that appear to be sustaining.
C. Looking at the interests note how they could be used as reinforcers.
D. Rank the reinforcers gleaned from the interests as suspect reinforcers until they prove effective upon application to a given situation. If the behavior increases as a result of the applied suspect reinforcer, then the suspect reinforcer is in actuality a reinforcer for that particular student. If the suspect reinforcer does not increase the behavior to which it is applied, it is to be dropped from the list. Using this proven reinforcer, the approach can be initiated. Later, using the same procedure other reinforcers can also be tested for effectiveness.

REFERENCES

Birnbrauer, J., Bijou, S., Wolf, M., and Kidder, J. Programmed instruction in the classroom. In L. P. Ullman and L. Krasner (Eds.), *Case studies in behavior modification*. New York: Holt, Rinehart and Winston, 1965, pp. 358-363.

Birnbrauer, J. and Lawler, J. Token reinforcement for learning. *Mental Retardation*, 1964, *2*, pp. 275-279.

Birnbrauer, J., Wolf, M., Kidder, J. and Tague, C. Classroom behavior of retarded pupils with token reinforcement. *Journal of Experimental Child Psychology*, 1965, *2*, pp. 219-235.

Karraker, R. Self versus teacher selected reinforcers in a token economy. *Exceptional Children*, April, 1977, *4*(1), pp. 454-455.

McKenzie, H., Clark, M., Wolf, M., Benser K. and Benson, C. Behavior modification of children with learning disabilities using grades as tokens

and allowances as backup reinforcers. Exceptional Children, 1968, *34*, pp. 745-752.

O'Leary, K., and Becker, W. Behavior modification of an adjustment class: A token reinforcement program. *Exceptional Children*, 1967, *33*, pp. 637-642.

O'Leary, K., Becker, W., Evans, M., and Saudargas, R., A token reinforcement program in a public school: A replication and systematic analysis. *Journal of Applied Behavior Analysis*, Spring, 1969, *2*(1), pp. 3-13.

Osborne, J. Freetime as a reinforcer in the management of classroom behavior. *Journal of Applied Behavior Analysis*, Summer 1969, *2*, pp. 113-118.

Quay, H., Werry, J. McQueen, M. and Sprague, R. Remediation of the conduct problem child in the special class setting. *Exceptional Children*, 1966, *32*, pp. 509-515.

Wolf, M., Giles, D. and Hall, R. Experiments with token reinforcement in a remedial classroom. *Behavior Research and Therapy*, 1968, *6*, pp. 51-64.

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Teacher Tolerance: A Major Factor in Deviancy Identification

George J. Yard and Richard L. Thurman

ABSTRACT

This study was a post hoc investigation of the differences found in ratings obtained from three groups of teachers focusing on their tolerance level for specific inappropriate behaviors. Fifty-five teachers (Group A = 21 regular educators, Group B = 19 regular educators, Group C = 15 special educators) were asked to rate their tolerance level for specific inappropriate behaviors on a four category scale. The scale was the Teacher Tolerance Scale (Yard, 1977) developed at the University of Missouri-St. Louis. The ratings were compared between group totals and subcategory totals. The results showed that teachers in an introductory class for behavioral disorders rated their tolerance level toward inappropriate behaviors significantly higher than teachers in regular education. The results were discussed with regard to the possible difference among and between groups.

INTRODUCTION

In 1854, Thoreau wrote of individuals who marched to the beat of a different drummer. Those words seem particularly appropriate to the area of human behavior. It is generally accepted that individual behavior is and can be different, that we have no one single pattern of behavior. Conversely, it is also accepted that individuals react differently to the behaviors of others. Most of this reaction is due to individual attitudes and values. Although individuality in behavior patterns might be ethically supported by a "free" society, it can also create problems when the issues of abnormal behavior becomes a focus of concern. Nunokawana (1965) stated that to understand abnormality entailed some knowledge of normality, and normality suggests that there are some behavior patterns more desirable than others. Unfortunately, we tend to lack a universal agreement of what constitutes a "value-free" definition of normality (Mowrer, 1965), irrespective of abnormality. So, while society has imposed broad legal and social standards for behavior, much is left to the judgement of individuals.

The school systems have become involved in this judgemental process for various reasons (Reinert, 1972). The evaluation of student behavior is a most crucial aspect of the teachers role. Rich (1977) said that teachers are the most responsible for the identification and referral of suspected behavior disorders in children and youth. This process continues to be accomplished even though through the years studies (Woody, 1969), have questioned the teachers judgement of abnormal behaviors and the lack of a common societal definition for behavior disorders (Mour, 1977). Further-

more, the entire classroom ecological system (Postman and Weingartner, 1969) is rarely taken into account or considered instrumental, with the onus of responsibility residing within the individual child identified as behavior disordered. Because of such factors, behavior disorders are seen as a value judgement (Rich, 1977) which is dependent upon the teachers perception (Mour, 1977), sensitivity and expectations (Kauffman, 1977), rather than specified objective criteria. Certainly a need exists to ameliorate this process.

It has been suggested that the process might be improved upon if teachers would examine and evaluate their own attitudes, behaviors, expectations and values. Mour (1977) stated that teachers must understand themselves and how they relate to children because of the reciprocal influence of their behavior. Jersild (1955) said that while it is difficult for a classroom teacher to analyze his/her expectations and values concerning disruptive annoyances, it is essential. Gordon (1966) said "one of the most difficult problems that teacher faces in analyzing the learning situation is assessing his (her) behavior . . ." (p. 89). Rich (1977) requested that teachers evaluate children's behavior from both an individual perspective and the teacher's own expectations and values. Thus such suggestions imply that an individual evaluation process would allow teachers to better know themselves professionally and perhaps create a more positive classroom ecology.

This investigation was directed toward assisting teachers toward this end. That is, because of the lack of commonality in definition, attention was directed at: (A) the various types of inappropriate behaviors, and (B) the degree to which teachers would accept inappropriate behaviors before seeking outside assistance. The Teacher Tolerance Scale (Yard, Note 1) was developed to assess the tolerance levels of teachers concerning the various types of inappropriate behaviors which might occur in the classroom. It was realized that teachers would accept some inappropriate behaviors for a considerably longer period of time than they would other inappropriate behaviors. It was the investigators philosophy (based upon several years of observing children producing inappropriate behaviors) that teachers spend a considerable amount of time avoiding inappropriate behaviors. Teachers respond to a particular inappropriate behavior when they can no longer tolerate that behavior; in other words, when they have reached that tolerance leve. Tolerance, therefore, suggest both interaction and noninteraction between the teacher and students. It was felt that the teacher's tolerance level was most instrumental in determining the severity of the inappropriate behavior. That is the point at which the teacher sought outside assistance. The purpose of the Teacher Tolerance Scale was to help individual teachers become aware of their own "tolerance level" for different types or kinds of inappropriate behaviors exhibited in the classroom. The purpose of this study was to pilot the instrument and determine its utility with classroom teachers.

METHOD

Subjects

The subjects comprised three groups of graduate students who were at-
 tending summer school at a midwestern university. The groups were repre-

sented by two classes of students in the same elementary education course (Groups A & B) and one class of students enrolled in an introductory course in behavioral disorders (Group C). All the subjects were currently employed teachers in various school districts within this geographic area.

Group A was composed of 21 females with a mean age of 26. All had bachelor degrees in education and life certification in either elementary or secondary education. Their teaching experience ranged from 0 to 18 years ($\bar{X} = 3.5$). The majority of this group taught in suburban schools, in grades K-6, with a mean class size of 25. These teachers taught classes which were composed of predominately white males.

Group B had 19 subjects most of which were female who had mean age of 30. All had bachelor degrees in education and life certification in either elementary or secondary education. Their teaching experience ranged from two to 16 years ($\bar{X} = 5.9$). The majority of the group taught in suburban schools, in grades K = 6 with a mean class size of 26. These teachers taught classes which were predominately white and with an even sex distribution.

Group C had 15 subjects the majority of which were females who had a mean age of 26. All had bachelor degrees in education and life certification in either elementary or secondary education. Their teaching experience ranged from 0 to 10 years of experience ($\bar{X} = 3.5$). The majority of the group taught in suburban schools in grades K-6 with a mean class size of 15. Their classes were predominately white males.

Instrument

The Teacher Tolerance Scale (Yard, Note 1) is a 107 item checklist format of observable and measurable inappropriate behaviors. The scale was developed by asking a random sample of 98 teachers to anonymously list all the types of inappropriate behaviors that students could produce in the classroom. The behaviors were then reviewed by three different trained raters who selected the most commonly mentioned inappropriate behaviors. Those behaviors were placed into four categorical groups by the raters. The four groups were: Academic Inappropriate Behaviors, Destructive Inappropriate Behaviors, Physical Inappropriate Behaviors, and Verbal Inappropriate Behaviors. Each of the categorical groups also contained subcategories which identified the target of the inappropriate behaviors. The Academic, Physical and Verbal Inappropriate Behavior categories contained the subcategories of Self, Peer and Authority. The Destructive Inappropriate Behaviors category had the behavioral subcategories of Peer, Authority and Inanimate.

Teachers are asked to rate their tolerance for each of the individual behaviors on the scale. They were asked to guage how long they would keep a child who produces inappropriate behavior(s) in his/her classroom. The guage of tolerance for any one-day span was determined by how long he/she would individually work with the specified behavior before he/she sent for help. The teachers were asked to rate the appropriate quartile level. Level 1 = 0-25 percent tolerance for the day, Level 2 = 26-50 percent tolerance for the day, Level 3 = 51-75 percent tolerance for the day, and Level 4 = 76-100 percent tolerance for the day. Thus, an example would be; if a

TABLE 1

Mean and F-Ratio's for Post Hoc Comparisons

Scale	Means			F-Ratio	F-Ratios for Post Hoc Comparison		
	Group A	Group B	Group C		A vs B	A vs C	B vs C
1. Physical Inappropriate (Self)	40.42	44.57	52.66	3.14@	.043	3.120*	.160
2. Physical Inappropriate (Peer)	8.81	8.21	9.93	.81			
3. Physical Inappropriate (Authority)	12.04	9.36	14.27	3.38@	.009	.056	.409
4. Physical Inappropriate (Total)	61.28	61.73	76.86	3.37@	.000	2.774*	.308
5. Verbal Inappropriate (Self)	7.76	8.21	9.93	1.68			
6. Verbal Inappropriate (Peer)	26.95	30.10	36.53	3.30@	.042	3.265**	.173
7. Verbal Inappropriate (Authority)	29.90	29.47	39.33	3.54@		2.717*	.349
8. Verbal Inappropriate (Total)	64.61	67.78	85.80	3.32@	.008	3.018*	.257
9. Academic Inappropriate (Self)	23.48	22.47	29.60	2.25			
10. Academic Inappropriate (Peer/Authority)	12.71	12.89	16.66	4.13@	.000	3.454**	.370
11. Academic Inappropriate (Total)	36.19	35.36	46.27	3.14@	.001	2.391*	.320
12. Destructive Inappropriate (Peer)	20.95	17.36	25.40	4.27@	.106	1.366	.524
13. Destructive Inappropriate (Authority)	13.90	11.52	18.00	4.10@	.068	1.700	.499
14. Destructive Inappropriate (Inanimate)	11.61	9.63	16.06	9.92@	.115	4.820**	1.186
15. Destructive Inappropriate (Total)	47.42	38.52	59.46	6.30@	.142	2.410*	.773

@ = significant at or beyond $p < .05$

* $p < .10$

** $p < .05$

teacher would accept a student leaving the room without permission (Physical Inappropriate Behavior-Self) 20 percent of the day, he/she would check the first-level block. It is important for the teacher to understand that the block levels (1, 2, 3, 4) represent the percentage as to how long the teacher would individually accept or work with the behavior, before obtaining outside (the classroom) assistance. The Teacher Tolerance Scale can be seen in *Appendix A*.

Procedure

The Teacher Tolerance Scale (Yard, Note 1) was administered individually to the subjects on a voluntary basis during one of their regular scheduled class periods. They were instructed to first complete the demographic information section and then wait for further instructions. Upon completion of the demographic information section they were verbally instructed to "please read each behavior and consider how long you accept the behavior in any one given day for a child before you would call for outside assistance (calling principal, guidance counselor, etc., to your room or sending the child to their offices). If the acceptable amount was, for example 20 percent of that day, check the first category of the rating scale. Likewise, if the behavior was totally unacceptable you would still check the first category. Remember, a check in category 4 means you would accept the behavior somewhere in the range of 76 percent to 100 percent of any one given day."

No discussion of the items among or between the subjects and investigators were permitted after the instructions were given. Any interpretations had to be carried out solely by the individual subjects. The participants were given all the time necessary to complete the scale with all easily completing it in about 25 minutes. The completed Teacher Tolerance Scales were returned to the investigators when the participants completed them.

Statistical analysis

A one-way analysis of variance design (Edwards, 1968) was used to examine differences between the means obtained from the subcategories of the Teacher Tolerance Scale. Tests for significance were made at the .05 level of confidence. Post-hoc comparisons among the means were made following a significant F ratio using the Scheffé (1955) method. The $p < .10$ level, as suggested by Scheffé, was used as the significance level.

RESULTS

The analysis of variance found significant F ratios ($df = 2, 52$) at the .05 level and beyond for twelve of the fifteen subcategories of the Teacher Tolerance Scale. The only subcategories not obtaining significant F ratios were: Physical Inappropriate-Peer, Verbal Inappropriate-Self and Academic Inappropriate-Self. The post-hoc comparisons for the significant F-ratios (Scheffé, 1955) found significant differences in nine of the 15 subcategories. They included the total score for each of the categories (Physical, Verbal, Academic and Destructive Inappropriate) and the subcategories of PI-Self, VI-Peer, VI-Authority, AI-Peer and Authority, DI-Peer and DI-Authority. All of the significant differences were found to exist between Groups A and C. The results of this analysis are shown on *Table 1*.

TABLE 2
Ten Most Serious Behaviors

Group		Mean	Item	Category	Sub-category
(A)	1.	1.380	Spitting at peer	Destruction Inappropriate Behavior	Peer
	2.	1.523	Masturbation	Physical Inappropriate Behavior	Self
	3.	1.550	Spitting at authority	Destructive Inappropriate Behavior	Authority
	4	1.571	Stealing from peers	Physical Inappropriate Behavior	Peer
	5.	1.571	Hiding possessions of peers	Physical Inappropriate Behavior	Peer
	6.	1.571	Tripping peers	Destructive Inappropriate Behavior	Peer
	7.	1.619	Calling teacher names	Verbal Inappropriate Behavior	Authority
	8.	1.619	Pulling hair of peers	Destructive Inappropriate Behavior	Peer
	9.	1.619	Throwing spit wads at authority	Destructive Inappropriate Behavior	Authority
	10.	1.666	Kicking authority	Destructive Inappropriate Behavior	Authority
(B)	1.	1.157	Hitting teacher	Destructive Inappropriate Behavior	Authority
	2.	1.157	Throwing objects at teacher	Destructive Inappropriate Behavior	Authority
	3.	1.166	Smoking	Physical Inappropriate Behavior	Self
	4.	1.166	Possession of drugs—peer	Destructive Inappropriate Behavior	Peer
	5.	1.263	Possession of drugs—self	Physical Inappropriate Behavior	Self
	6.	1.263	Pulling or tearing teacher's clothing	Physical Inappropriate Behavior	Authority
	7.	1.263	Kicking authority	Destructive Inappropriate Behavior	Authority
	8.	1.263	Destruction of materials	Destructive Inappropriate Behavior	Inanimate
	9.	1.315	Stealing from peers	Physical Inappropriate Behavior	Peer
	10.	1.315	Spitting at authority	Destructive Inappropriate Behavior	Authority
(C)	1.	1.400	Possession of drugs—peer	Destructive Inappropriate Behavior	Peer
	2.	1.500	Possession of drugs—self	Physical Inappropriate Behavior	Self
	3.	1.733	Hitting peers with objects	Destructive Inappropriate Behavior	Peer

TABLE 2 (*continued*)

4.	1.800	Destroying peers possessions	Physical Inappropriate Behavior	Peer
5.	1.800	Possession of weapons—authority	Destructive Inappropriate Behavior	Authority
6.	1.866	Possession of weapons—peers	Physical Inappropriate Behavior	Peer
7.	1.866	Stealing from peers	Physical Inappropriate Behavior	Peer
8.	1.866	Spitting at peers	Destructive Inappropriate Behavior	Peer
9.	1.866	Throwing objects at peers	Destructive Inappropriate Behavior	Peer
10.	2.000	Kicking peers	Destructive Inappropriate Behavior	Peer

A secondary analysis was conducted to identify the ten most serious behaviors as reflected by ratings of the three groups. This was accomplished by ranking the mean scores for each of the 107 inappropriate behavior items. The results of this analysis can be seen on *Table 2*.

DISCUSSION

The intent of this investigation was to determine whether discrepancies existed in the tolerance level for inappropriate behaviors in three different teacher samples. A secondary focus was to identify the types of inappropriate behavior that the teacher samples rated as most serious. The assumption in this inquiry was that a basic understanding by teachers of their tolerance for inappropriate behaviors is helpful both personally and professionally.

In the context of the limited scope of this study, it was found that significant differences in teacher tolerance levels not only existed, but could also be measured. As can be seen on *Table 1*, significant differences between Groups A and C were found on a majority of the subcategories. In comparing the two samples demographically, there were more similarities than difference. The only major difference was that Group C was being trained in the area of behavior disorders. Thus, teacher tolerance might be linked to teacher training. Further research should be directed toward such variables before this can be stated conclusively. Interestingly, Group B had no significant differences on the Teacher Tolerance Scale subcategories when compared to Groups A and C. The results centered it between the two groups. Group B's demographic data revealed that the teachers in this sample were older ($\bar{X}$ = 30 years) and had the highest mean for years of teaching experience ($\bar{X}$ = 5.9 years). Perhaps, maturity and years of teaching experience are also instrumental variables in teacher tolerance levels. Again, further research needs to be undertaken to study these factors.

When comparing the rankings of the ten most serious behaviors, Group C's overall mean scores were higher than the means of Groups A and B. Also, the inappropriate behaviors selected by Group C were different than those selected by the other two samples. Group A and B indicated more concerns about inappropriate behaviors directed toward authority, while Group C indicated greatest concerns with inappropriate behaviors directed toward peers.

In a follow-up discussion with the participants the investigators found that the teachers viewed the inappropriate behaviors from degrees of acceptance. That is, some teachers found most of the behaviors as totally unacceptable, while other teachers viewed the same behaviors with a higher degree of acceptability (tolerance). Some teachers viewed the behaviors as severe but would tolerate those behaviors for a considerable length of time. Other teachers rated the behaviors as severe and would only tolerate them for a short time. Teachers who indicated a higher tolerance rated the behaviors as less severe. Furthermore, the degree of teacher tolerance toward specific behaviors appears so inconsistent that when a label of behavior disordered is placed upon a child that label is inconsistent in its meaning. Therefore the child is labeled behavior disordered not on the basis of objective criteria, but on the basis of the tolerance level of the teaching personnel

for behavior exhibited. This inconsistency further supports the contentions of Mour (1977) and Rich (1977) concerning the ambiguity of the label, behavioral disorders.

The results of this investigation support the suggestions of Mour (1977) in which he concludes that teachers willingness to examine and modify their own behavior was necessary for a functional classroom balance. He further suggests that teachers behaviors may be the cause/source of unacceptable student behaviors. It is the investigators opinion that if teachers understand their tolerance levels for various inappropriate behaviors, they will increase their objectivity in teacher/student relationships. This information would assist them both personally and professionally.

Some cautions are in order. First, this investigation was a pilot study which utilized a limited sample (size and sex distribution) from one university and therefore may reflect a sampling bias. Secondly, the gathering of data on a percentage and/or average basis causes some of the individual information to be lost. Thirdly, the instrument itself, being a rating scale is subject to errors. Good and Brophy (1977) state that rating scales have the following drawbacks: (A) forces the rater to make a qualitative judgement, (B) difficult to rate performance dismensions separately, and (C) subject to *halo effect* errors.

In conclusion, the Teacher Tolerance Scale appears to have immense potential utility with teachers. Within the past couple of years writers (Mour, 1977; Rich, 1977) have suggested that teachers examine their own attitudes and behaviors. They suggest that the teacher is the most important factor in the classroom ecology, and that the onus of responsibility for inappropriate behaviors not be placed solely on the student. While these suggestions appear valid, they have largely gone unheeded. This investigation has shown that teacher tolerance levels can be examined. Further research should continue to investigate the areas of teacher attitudes, behaviors and tolerance as they relate to the classroom ecology. If for no other reason, investigations of teacher tolerance should cause educators to reexamine their attitudes and strive to become as "objective" as possible in their classroom behavior along with their analysis of student behavior.

REFERENCE

Yard, G. J. *Teacher Tolerance Scale (Experimental Edition)* St. Louis: University of Missouri-St. Louis, 1977.

REFERENCES

Edwards, A. L. *Experimental design in psychological research, Third Edition*. New York: Holt, Rinehart and Winston, Inc., 1968.

Good, T. L. and Brophy, J. E. *Educational psychology: A realistic approach*. New York: Holt, Rinehart and Winston, 1977.

Gordon, I. J. *Studying the child in school*. New York: John Wiley & Sons, 1966.

Jersild, A. T. *When teachers face themselves*. New York: Teachers College, Columbia University, 1955.

Kauffman, J. M. *Characteristics of children's behavior disorders*. Columbus, Ohio: Charles Merrill Publishing Company, 1977.

Mour, S. I. Teacher behavior and ecological balance. *Behavioral Disorders*, Vol. 3, No. 1, 1977, pp. 55-59.

Mowner, O. H. What is normal behavior? In W. D. Nunokawana's (Ed.) *Human values and abnormal behavior*. Chicago: Scott, Foresman and Company, 1965.

Nunokawana, W. D. *Human values and abnormal behavior*. Chicago: Scott, Foresman and Company, 1965.

Postman, N. and Weingartner, C. Teaching as a subversive activity. New York: Delaconta Press, 1969.

Reinert, H. R. The emotionally disturbed. In B. R. Gearheart's (Ed.) *Education of the exceptional child*. Scranton, Pennsylvania: Intext Educational Publishers, 1972.

Rich, H. L. Behavior disorders and school: A case of sexism and racial bias. *Behavioral Disorders*, Vol. 2, No. 4, 1977, pp. 201-204.

Scheffé, H. A. A method for judging all contracts in the analysis of variance. *Biometrika*, 1953, *40*, pp. 87-104.

Thoreau, H. D. *Walden*. New York: Crown Publishers, 1854, Reprinted 1970.

Woody, R. H. *Behavioral problem children in the schools*. Englewood Cliffs, New Jersy: Prentice Hall, 1969.

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APPENDIX

Teacher Tolerance Scale

Personal Information: (check appropriate blank or fill in where applicable)

1. Teacher's age: 20 to 29 ___; 30 to 39 ___; 40 to 49 ___; 50 and up ___
2. Sex: Female _____; Male ____
3. Years of teacning experience: _____
4. Highest degree held: B.S. or B.A. ___; Masters ___; Masters + 30 ___;
   Specialist ___; Doctorate ___
5. Certification areas: (list only life certification) _____
   _____
6. Teacher pupil ratio: 0 to 14 ___; 15 to 29 ___; 30 and up ___
7. Predominate race of pupils: _____
8. Average parent incomes: 0 to $4999 ___; $5000 to $9999 ___;
   $10,000 to $14,999 ___; $15,000 and up ___
9. Geographic location: rural ___; suburban ___; urban ___
10. Predominate sex of class: Female ___; Male ___
11. Grade level of class: (these represent actual grade placement)
    K to 3 ___; 4 to 6 ___; 7 to 9 ___; 10 to 12 ___

- -

Rating Scale

1 = 0 to 25%

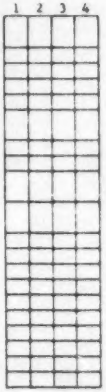
2 = 26 to 50%

3 = 51 to 75%

4 = 76 to 100%

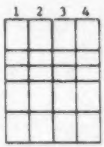
Physical Inappropriate Behavior

I. Self



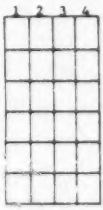
a. eating
b. chewing gum
c. picking nose
d. moving desk around room
e. masturbation
f. leaving room without permission
g. tardiness
h. sulking and pouting
i. pencil sharpening during lesson
j. walking around during lesson
k. getting out of seat
l. snapping fingers
m. foot tapping
n. smoking
o. making faces
p. heterosexual activities
q. leaning back on chairs
r. falling out of seat
s. falling over in desk
t. possession of drugs

II. Peer



a. stealing from peers
b. hiding peers' possessions
c. going into peers' desks
d. pulling or tearing clothing
e. destroying peers' possessions

III. Authority



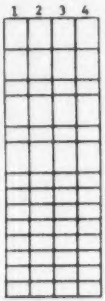
a. stealing from teacher
b. hiding teachers' possessions
c. going into teachers' desk
d. defiance (stomping away, slamming door, etc.
e. destroying teacher's possessions
f. pulling or tearing teacher's clothing

Verbal Inappropriate Behavior

I. Self

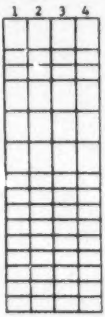
a. shouting
b. crying
c. temper tantrums
d. belching

II. Peer



a. using profanity
b. excessive talking with and to peers
c. shouting
d. talking to prevent peers from working
e. name calling
f. laughing at or making fun of others
g. interrupting peers
h. lying
i. whinning
j. tattling
k. threatening
l. arguing
m. teasing
n. imitating

III. Authority



a. using profanity
b. excessive talking
c. shouting
d. talking during lesson
e. not raising hand to talk
f. calling teacher names
g. interrupting teacher
h. lying
i. whinning
j. tattling
k. threatening
l. talking back
m. mumbling
n. arguing
o. imitating

Rating Scale
1 = 0 to 25%
2 = 26 to 50%
3 = 51 to 75%
4 = 76 to 100%

Academic Inappropriate Behavior

I. Self

	1	2	3	4
a. verbal refusal to do assignment				
b. not doing assignment				
c. working at inappropriate time				
d. procrastinating				
e. wasting extra time				
f. inattentiveness				
g. doodling				
h. cheating				
i. sloppy work				
j. not doing homework				
k. destroying work				

II. Peer and Authority

	1	2	3	4
a. playing with peers instead of working				
b. copying others' work				
c. requesting peers' help				
d. inattentiveness to teacher				
e. requesting directions after instructions have been given				
f. destroying work				

Rating Scale

1 = 0 to 25%
2 = 26 to 50%
3 = 51 to 75%
4 = 76 to 100%

Destructive Inappropriate Behavior

I. Peer

	1	2	3	4
a. hitting				
b. touching				
c. hitting others with objects				
d. throwing objects (at)				
e. kicking				
f. pushing				
g. spitting				
h. throwing spit wads				
i. tripping				
j. pulling hair				
k. possession of weapons				
l. possession of drugs				

II. Authority

	1	2	3	4
a. hitting teacher				
b. touching teacher				
c. throwing objects (at)				
d. kicking				
e. pushing				
f. spitting				
g. throwing spit wads				
h. possession of weapons				

III. Inanimate

	1	2	3	4
a. throwing trash on floor				
b. banging on desks and tables				
c. sitting on top of desk				
d. turning furniture over				
e. destruction of materials				
f. defacing materials				

Review of Self-Control Research with Behaviorally Disordered and Mentally Retarded Children

Robert Rueda, Robert B. Rutherford, Jr., and Kenneth W. Howell

INTRODUCTION

Currently there appear to exist several different approaches to self-control and there is a tendency for investigators to focus on one or more of the hypothesized subdomains of self-control. The existence of these subdomains and the diversity of the definitions applied to them make it somewhat difficult to review and summarize this body of research. As an organizational aid, we have chosen to treat self-control from the traditional behavioral model consisting of antecedent and consequent events. Antecedent interventions include self-speech and self-regulatory events occurring before the target behavior (*e.g.*, Meichenbaum and Goodman, 1971). Consequent interventions, on the other hand, include self-regulatory events such as self-monitoring or self-reinforcement occurring after the target behavior (*e.g.*, Broden, Hall, and Mitts, 1971). The present review is limited to studies of the second category, namely investigations involving consequent interventions.

Along with the transmission of information and acquisition of academic and social skills, the schools have as their primary objective the facilitation of children's learning to independently manage their own behavior. John Dewey (1939) observed that, "the ideal aim of education is the creation of the power of self-control" (p. 75). Johnson and Martin (1973) make a similar observation that, "The development of self-regulation has consistently been viewed as one of the most important objectives of the socialization process" (p. 69). However, self-regulation is rarely approached as a skill to be independently and systematically taught. Lovitt (1973) notes "that self-management behaviors are not systematically programmed (in the schools) which appears to be an educational paradox, for one of the expressed objectives of the educational system is to create individuals who are self-reliant and independent" (p. 139).

A number of writers (*e.g.*, Holt, 1964; Rogers, 1969; Postman and Weingartner, 1969) have, in fact, criticized American public education for its constant emphasis on the external control of children's lives and the systematic suppression of their independent thought and action. The schools have been viewed as the primary agents for fostering conformity among children and youth. Individual, self-initiated behavior is seen as sacrificed in the name of control and order in the classroom. Programming is designed to maintain the child within the group, rather than as an independently functioning individual.

One of the primary causes of limited freedom in the schools is the development of a behavioral technology in the schools which has facilitated this emphasis on the external control of children's behavior rather than on the development of children's self-control. Behavioral applications in the classroom have been criticized for their reliance on techniques for making children still, quiet, and docile (Winett and Winkler, 1972). In addition, they are criticized for the fact that the target behaviors in question, and the antecedents and consequences that are designed to modify these behaviors, are determined in almost every instance by the teacher. While O'Leary (1972); Reith and Hall (1974); Willis and Giles (1976) and others have pointed out the personal and social benefits to the vast majority of subjects in numerous applied behavioral analysis studies in the schools, it has not been until recently that strategies for increasing students' self-control or self-management have begun to receive increased attention in the behavioral literature (McLaughlin, 1976; Karoly, 1977; Polsgrove, 1979).

SELF-CONTROL: A BEHAVIORAL CONCEPTUALIZATION

The area of self-control has been clouded by problems of definition. There continues to exist "a broad and diverse interpretation (of) the term self-control" (Thoresen and Mahoney, 1974). terms such as self-awareness (London, 1971; Catania, 1975); *self-management* (O'Leary, 1972; Mahoney, 1972); *self-instruction* (Meichenbaum, 1975); *self-monitoring* (Broden, Hall and Mitts, 1971; McFall, 1977); *self-reinforcement* (Goldiamond, 1965); *self-regulation* (Kanfer and Karoly, 1972, Kanfer, 1975); *self-determination* (Skinner, 1953); and *self-imposed behavior modification* (Cautela, 1969), are often used interchangeably by researchers. As Thoresen and Mahoney (1974) state, this practice contributes to the confusion about this area of study. The nature of the problem is succinctly stated by Kanfer and Phillips when they observe that, "the practical management of self-control has been easier to achieve than the conceptualization" (1970, p. 412).

The components of two definitions or explanations of self-control will be examined in relation to their relevance to children controlling their own behavior in the classroom. First, Glynn, Thomas, and Shee (1973) provide a conceptual base for the analysis of self-control in terms of four behavioral components:

(1) *self-assessment* where the individual may examine his own behavior and decide whether or not he has performed a specified behavior or class of behaviors;

(2) *self-recording* where the individual may objectively record the frequency of his own performance of a given behavior or class of behaviors;

(3) *self-determination of reinforcement* where the individual may determine from all available reinforcers the nature and amount of reinforcement he should receive contingent upon his performance of a given behavior or class of behaviors; and

(4) *self-administration of reinforcement* where the individual dispenses his reinforcers (which may or may not be self-determined) contingent upon his performance of a given behavior or class of behaviors (p. 105).

Glynn, Thomas, and Shee (1973) examined the behavior maintenance properties of these four components of self-control with eight regular primary school children. Using a multiple baseline design that included internal and external control conditions (*e.g.*, the four components), the children maintained high rates of on-task behavior that had been established by externally administered reinforcement procedures. The students assessed and recorded their own on-task behavior as well as determined and administered the reinforcers for these behaviors.

Kanfer and Karoly (1972) and Kanfer (1975) provide a second, and a bit more complex, definition of *self-regulation*. Their definition has helped clarify the confusion created by multiple definitions and labels for similar phenomena by establishing a self-control paradigm that describes the components of self-control behavior. The concept of self-regulation is concerned with the processes by which the child alters or maintains his behavior in the absence of immediate external supports. Self-control is viewed as the final outcome of a three-stage self-regulatory process involving: (1) self-monitoring, (2) self-evaluation, and (3) self-reinforcement or self-punishment.

Self-Monitoring. The process where the child observes his own behavior monitoring is called self-monitoring. Polsgrove (1979) describes an example of how the self-monitoring process might work:

> In training a child to monitor his behavior a trainer may first select and behaviorally define a target behavior. Next, he may have the child record examples of his behavior using a wrist counter, abacus, tally card, or stop watch. The child may also monitor a graph, chart, or a journal of his behavior. Self-monitoring and recording provides visual feedback of the child's progress and leads to self-evaluation (p. 118).

There are several recent studies where children were taught self-monitoring in an attempt to modify various disruptive and off-task behaviors. Broden, Hall and Mitts (1971) found that an eighth grade girl increased her study behavior from 30 percent to 78 percent following self-recording of her study behavior and reporting this behavior to the counselor. Self-monitorig plus contingent adult praise increased study behavior to 88 percent but adult praise alone decreased the behavior to 77 percent. Broden and her colleagues, however, found that self-monitoring did not maintain behavior change for a second child. Gottman and McFall (1972) found that when disruptive adolescents were asked to record the times they contributed to class discussion they, in fact, increased these class contributions. A comparison group who recorded the number of times they felt like contributing but did not, decreased their class discussion behaviors. Bolstad and Johnson (1972) found that elementary school children "were capable of self-observing their frequency of disruptive behavior with respectable accuracy" (p. 451-452). They accurately monitored their unauthorized speech, out-of-seat behavior, and physical aggression. Glynn, Thomas, and Shee (1973), mentioned earlier in relation to the four components of self-control, trained eight school children to accurately assess (monitor) their behavior and use these data as a basis for contingent self-reinforcement. McLaughlin and Malaby (1975), on the other hand, found that self-monitoring in the form of self-recording, graphing and tokens was less effective in reducing the number of incomplete assignments among sixth graders than an entire token program with tokens, response cost, privileges, graphing, and self-

recording. Although these results are not particularly surprising considering the magnitude of the latter intervention, the study does illustrate the potency of combining external and internal control variables.

Self-Evaluation. Kanfer and Karoly's (1972) second stage in the self-regulation process is self-evaluation which involves "making a discrimination or judgement about the accuracy of . . . performance relative to a subjectively held standard or comparison criterion" (p. 209). This involves a comparison of one's behavior against an established personal or normative standard. Self-evaluation is greatly facilitated when individuals have self-monitored data in the form of records, charts, and graphs of their behavior. Self-evaluation serves as a cue for determining the degree of allowable self-reinforcement. Therefore, when the child evaluates his behavior favorably, he may deliver overt or covert positive self-reinforcement. Conversely, when he judges his behavior negatively, he may self-administer aversive consequences. Self-evaluation thus becomes a vital middle link or stage in the self-regulation process. That child must record his behavior (monitoring), make a judgement about his behavior relative to some standard (evaluation), and deliver self-contingencies (reinforcement or punishment).

Self-Reinforcement or Self-Punishment. The final stage of Kanfer and Karoly's model of self-regulation is self-reinforcement in which the judgement made in self-evaluation acts as a stimulus for either positive self-reinforcement or self-presented aversive stimulation.

Lovitt and Curtiss (1969) investigated the effects of teacher-determined versus student-determined contingencies of reinforcement. The data indicated that the 12-year-old subject produced a greater number of academic responses per minute when he specified the contingencies rather than when the teacher specified them. The superiority of the self-specified contingencies maintained even when the magnitude of the reinforcement was held constant, that is, when the teacher and child delivered the same amount of reinforcement, the child still performed at a higher rate when he chose the contingencies.

Bolstad and Johnson (1972) compared the effectiveness of teacher versus child regulation of reinforcement on the disruptive behaviors of 38 first and second graders. The self-reinforcement condition resulted in a 40 percent decrease in disruptive behavior when compared to the teacher reinforcement condition.

Although evidence is available regarding the efficacy of self-reinforcement procedures, a number of the comparative studies found that external and self-reinforcement procedures were equally effective in the classroom. Glynn (1970), Johnson (1970), Johnson and Martin (1973), Felixbrod and O Leary (1973), and Dana (1974) all found that children's rate of behavior was equally affected by self- and teacher-imposed contingencies.

Thus, given that the classroom studies comparing the effects of external and self-reinforcement indicate that self-imposed contingencies are either more effective or as effective as teacher-imposed contingencies, perhaps this area of classroom research should be further investigated in terms of the relationship between self-regulation and the socialization process mentioned earlier.

SELF-DIRECTED BEHAVIOR CONTROL

The self-directed behavior control research that has been conducted to date in the classroom can be divided into two types of studies: (1) *self-maintenance* where the child uses self-control procedures to maintain behaviors acquired initially through external or teacher control, and (2) *self-change* where the child is taught self-control procedures to develop new behaviors not previously in his repertoire.

Self-Maintenance. One method suggested by Stokes and Baer (1977) for facilitating the maintenance and generalization of appropriate behaviors developed through systematic external reinforcement is to program child self-regulation behaviors (*e.g.*, self-monitoring, self-evaluation, and self-reinforcement) into the child's behavioral repertoire. The majority of self-control studies have, in fact, begun from an external control base.

Interestingly, a study conducted by Santogrossi, O'Leary, Ramanczyk, and Kaufman (1973), which showed that self-regulation conditions were ineffective in maintaining the low levels of disruptive behaviors previously established by externally imposed contingencies, has lead to a number of studies where the reverse effect was achieved. In the Santogrossi *et. al.*, (1973) study, the nine adolescent subjects in a psychiatric hospital, when given the opportunity to self-monitor, self-evaluate, and self-reinforce their compliance with five classroom rules, tended to overrate their compliance behavior and beat the system. In other words, they could continue to be disruptive and still receive the desired reinforcers by giving themselves inflated self-evaluations.

Drabman, Spitalnik and O'Leary (1973) and Turkewitz, O'Leary and Ironsmith (1975) improved on the initial Santogrossi *et. al.*, study and found that self-regulation procedures can increase maintenance of behavior initially developed through external regulation procedures. Drabman *et al.*, (1973) introduced a gradual transition from external to self-reinforcement conditions by slowly fading out the checking and comparing of child ratings of disruptible behavior with teacher ratings of the same behavior. Turkewitz *et. al.*, (1975), in a systematic replication of the Drabman *et. al.*, (1973) study, found that consequences for self-evaluation and back-up reinforcers could be gradually faded out while maintaining low rates of disruptive behavior. Thus, a critical factor in the successful transition is made. If the transition is systematically and gradually programmed, it appears that self-regulation may maintain treatment effects first developed through teacher control.

The Glynn, Thomas and Shee (1973) study also indicated that self-regulation procedures resulted in the maintenance of high levels of on-task behavior previously established by externally administered reinforcement. An interesting additional finding in this study was the apparent reduction in the variance in the behavior during the three self-control periods. This greater stability of on-task behavior when the students recorded and assessed their own behavior, as well as determined and administered the levels of reinforcement for these behaviors, may prove an added benefit for developing self-control as a behavioral maintenance procedure.

Self Change. Several studies have introduced self-control procedures to children in classroom settings when they have had no prior experience with

systematic external control procedures. These studies were designed to use self-control as the primary intervention to bring about behavioral change. Glynn and Thomas (1974) examined the effects of self-regulation procedures on the on-task behavior of nine "difficult to manage" third graders. The children, who had no prior experience with a token economy, failed to increase their on-task behavior under self-regulation until a "behavioral cueing procedure" was instigated which signalled to the children whether teacher-directed or work-directed behaviors would be considered on-task at a given moment.

Broden, Hall and Mitts (1971) found mixed results indicating that self-regulation as intervention was effective in increasing an eighth grade girl's study behavior but of questionable effectiveness in reducing an eighth grade boy's talk-outs. Although, in the latter case, talk-outs decreased significantly when self-recording was in effect during initial intervention periods, talk-outs failed to decrease significantly following the second baseline period. This latter finding may indicate that the effects of self-recording alone may not be long-lasting.

Kunzelmann (1970) introduced self-recording as an intervention procedure to decrease whining behavior. Following baseline, which showed a rate of 2.5 whines per hour, the child was instructed to record his own behavior on a "countoon".[1] Whining behavior decreased to zero within ten days and maintained at zero for six weeks. Although this study was limited by being an AB Design, one component of self-regulation, namely self-monitoring, appeared to affect whining behavior.

SELF-CONTROL AND EXCEPTIONAL CHILDREN

Recently there has been a call for the development of self-regulatory skills in exceptional children (Kurtz and Neisworth, 1976; Litrownik, Frietas, and Franzini 1978; Mahoney and Mahoney, 1976). A large part of our interest in this line of research is related to the development of social competence—something which we as adults often take for granted—*e.g.*, not talking to strangers on an elevator, or not asking an obese stranger how much he/she weighs. The development of these skills is often taken for granted in schools, *i.e.*, the "hidden curriculum". Yet, for exceptional children, the development of precisely these types of skills may be the entire curriculum (Hewett and Forness, 1974).

Although the self-control literature has indicated promise as an effective behavior change method, the application of this knowledge has been slow in extending to exceptional populations, especially with the more severe cases of behavior disorders and mental retardation. In part this has been due to attitudes such as that expressed by Robinson and Robinson (1976) in the following quote referring to TMR's; ". . . TMR children will not achieve any measure of social or economic independence as adults . . ." Such attitudes are hardly conducive in the application of self-control techniques to exceptional populations.

We have seen that "self-control" may consist of a variety of events/activities:

[1] The authors would like to thank Lisa Koenig and Karen Kitinoja for assistance in collecting these data.

self-monitoring, selection of terminal behaviors/goals, setting behavioral standards, establishing contingencies, etc. These behaviors may be conceptualized as lying on a continuum from entry level behaviors to terminal behaviors, easiest to hardest, etc. Exceptional children should be taught to move along this continuum by exhibiting self-control to whatever degree possible. For example, if it is established that TMR's can self-monitor but cannot self-evaluate, then the idea of self-control should not be completely discarded. Rather, these individuals should be trained to self-monitor. Helland, Paluck, & Klein (1976) attempted to train adult TMR's to self-monitor and self-reinforce in a vocational workshop task. The task consisted of collating paper by taking 1 piece of blank paper from each of two piles, stapling them together, and making a 3rd pile. The objective was to determine whether the Ss could self-monitor and self-reinforce after every 10th sheet. To compensate for deficient counting skills, a piece of blank colored paper was inserted after every 10 sheets to help structure the situation. Similarly, in the Kunzelmann (1970) study, countoons greatly simplified the task of self-recording and enhanced interest and motivation. In the study by Glynn and Thomas (1974) with third grade students, subjects were instructed to self-monitor on-task and off-task classroom behavior. However, many students initially had trouble distinguishing appropriate on-task and off-task behaviors. Therefore, a color-coded chart was displayed on the blackboard to indicate changing requirements of on-task behavior. For example, a *red* chart indicated that appropriate on-task behavior included looking at the teacher, staying in seat, and being quiet. A *green* chart indicated that appropriate on-task behavior included working silently, writing in the test, and reading the board.

Although the literature on self-control seems to hold promise for exceptional children, there are still many unresolved questions. It is therefore important to briefly examine the future directions for research. The data on self-monitoring with moderately retarded and behaviorally disordered children indicate that they can accurately self-monitor. However, there are a variety of factors known to affect monitoring accuracy which need to be investigated. These include:

1. *Task difficulty*—simple recording with a (✓) vs. describing behavior, antecedents, consequences
2. *Type of task*—motor, cognitive, verbal
3. *Consequences*—teacher (external) vs. self (internal)
4. *Awareness of accuracy assessment*—"being watched"
5. *Concurrent demands during self recording*
6. *Reactivity effects*—does simple recording change the level of the behavior?
7. *Identification of target behavior*—external vs. internal

Another research area warranting investigation includes the sequential steps of self-control, self-evaluation (setting standards), and self-reinforcement, *i.e.*, what are the separate effects of each component? Finally, the entire area of *cue regulation* (Kurtz and Neisworth, 1976), or actions taken to alter conditions *antecedent* to a target behavior, has received little

attention. This includes simple alterations of the environment such as not carrying change when on a diet so as not to be able to buy candy. It may also include the use of self-instructions, which has been successful in modifying the behaviors of hyperactive and schizophrenic children (Meichenbaum and Cameron, 1974).

Hopefully further research and application of self-control techniques will assure the integration of exceptional children into mainstream social structures to the maximum extent possible. The fact that exceptional populations must be cared for need not preclude them from caring for themselves.

REFERENCES

Bolstad, O. D. and Johnson, S. M. Self-regulation in the modification of disruptive classroom behavior. *Journal of Applied Behavior Analysis*, 1972, *5*, pp. 443-454.

Broden, M., Hall, R. V., and Mitts, B. The effect of self-recording on the classroom behavior of two eighth-grade students. *Journal of Applied Behavior Analysis*, 1971, *4*, pp. 191-199.

Catania, A. C. The myth of self-reinforcement. *Behaviorism*, 1975, *3*, pp. 192-199.

Cautela, J. R. Behavior Therapy and self-control: Techniques and implications in C. Franks (Ed.), *Behavior Therapy: Appraisal and Status*. New York: McGraw Hill, 1969, pp. 323-340.

Dana, J. Programming generalization of academic behavior by self-reinforcement (Doctoral dissertation, University of Arkansas, 1974). *Dissertation Abstracts International*, 1974, *35*, 3056B-3057B. (University microfilms No. 74-28, 061)

Dewey, J. *Experience and Education*. New York: Macmillan, 1939.

Drabman, R. S., Spitalnik, R. and O'Leary, K. D. Teaching self-control to disruptive children. *Journal of Applied Behavior Analysis*, 1973, *6*, pp. 10-16.

Felixbrod, J. L. and O'Leary, K. D. Effects of reinforcement on children's academic behavior as a function of self-determined and externally imposed contingencies. *Journal of Applied Behavior Analysis*, 1973, *6*, pp. 241-250.

Glynn, E. L., Classroom applications of self-determined reinforcement. *Journal of Applied Behavior Analysis*, 1970, *3*, pp. 123-132.

Glynn, E. L. and Thomas, J. D. Effect of cueing on self-control of classroom behavior. *Journal of Applied Behavior Analysis*, 1974, *7*, pp. 299-306.

Glynn, E. L., Thomas, J. D., and Shee, S. M. Behavioral self-control of on task behavior in an elementary classroom. *Journal of Applied Behavior Analysis*, 1973, *6*, pp. 105-113.

Goldiamond, I. Self control procedures in personal behavior problems. *Psychological Reports*, 1965, *17*, pp. 851-868.

Gottman, J. and McFall, R., Self-monitoring effects in a program for potential high school dropouts. *Journal of Consulting and Clinical Psychology*, 1972, *39*, pp. 273-281.

Helland, C. D., Paluck, R. J., and Klein, M. A. Comparison of self- and external reinforcement with the trainable mentally retarded. *Mental Retardation*, 1976, *14*, pp. 22-23.

Hewett, F. M. and Forness, S. R. *Education of exceptional learners*. Boston: Allyn & Bacon, 1974.

Holt, J. *How Children Fail*. New York: Pittman, 1964.

Johnson, S. M. Self-reinforcement versus external reinforcement in behavior modification with children. *Developmental Psychology*, 1970, *3*, pp. 147-148.

Johnson, S., and Martin, S. Developing Self-evaluation as a conditioned reinforcer. In B. Ashem and E. G. Poser (Eds.), *Adaptive Learning: Behavior Modification with Children*. New York: Pergamon, 1973, pp. 69-78.

Kanfer, F. H. Self-management methods. In F. H. Kanfer and A. P. Goldstein (Eds.) *Helping People Change*. New York: Pergamon, 1975. pp. 309-355.

Kanfer, F. H. and Karoly, P. Self-control: A behavioristic excursion into the lion's den. *Behavior Therapy*, 1972, *3*, pp. 398-416.

Kanfer, F. H. and Phillips, J. S. *Learning foundations of behavior therapy*. New York: John Wiley, 1970.

Karoly, P. Behavioral self-management in children: Concepts, methods, issues and directions. In M. Hersen, R. M. Eisler and P. M. Miller (Eds.), *Progress in Behavior Modification—Volume 5*. New York: Academic Press, 1977.

Kunzelmann, H. D. (Ed.) *Precision Teaching: An Initial Training Sequence*. Seattle, Washington: Special Child Publications, 1970.

Kurtz, P. D. and Neisworth, J. T. Self control possibilities for exceptional children. *Exceptional Children*, 1976, *42*, pp. 212-217.

Litrownik, A. J., Freitas, J. L. and Franzini, L. R Self-regulation in mentally retarded children: Assessment and training of self-monitoring skills. *American Journal of Mental Deficiency*, 1978, *82*, pp. 499-506.

London, P. *Behavioral control*. New York: Harper and Row, 1971.

Lovitt, T. C. Self-management projects with children with behavioral disabilities. *Journal of Learning Disabilities*, 1973, *6*, pp. 138-150.

Lovitt, T. C. and Curtiss, K. Academic response rate as a function of teacher and self-imposed contingencies. *Journal of Applied Behavior Analysis*, 1969, *2*, pp. 49-53.

Mahoney, M. H. Research issues in self-management. *Behavior Therapy*, 1972, *3*, pp. 45-63.

Mahoney, M. H. and Mahoney, K. Self-control techniques with the mentally retarded. *Exceptional Children*, 1976, *42*, pp. 338-339.

McFall, R. M. Parameters of self-monitoring. In R. B. Stuart (Ed.) *Behavioral Self-Management*. New York: Brunner/Mazel, Inc., 1977.

McLaughlin, T. F. Self-control in the classroom. *Review of Educational Research*, 1976, 46, pp. 631-663.

McLaughlin, T. F. and Malaby, J. E. The effects of various token reinforcement contingencies on assignment completion and accuracy during variable and fixed token exchange periods. Canadian Journal of Behavioral Science, 1975, *7*, 411-419.

Meichenbaum, D. Toward a cognitive theory of self-control. In G. Schwartz and D. Shapiro (Eds.), *Consciousness and Self-Regulation: Advances in Research*. New York: Plenum Press, 1975.

Meichenbaum, D. and Cameron, R. The clinical potential of modifying what clients say to themselves. In M. H. Mahoney and C. E. Thousen (Eds.),

Self-Control: Power to the Person. Monterey, California: Brooks-Cole, 1974.

Meichenbaum, D., and Goodman, J. Training impulsive children to talk to themselves: A means of developing self-control. *Journal of Abnormal Psychology*, 1971, *77*, 115-126.

O'Leary, K. D. Behavior modification in the classroom: a rejoinder to Winett and Winkler *Journal of Applied Behavior Analysis*, 1972, *5*, pp. 505-511.

Polsgrove, L. Self-Control: Methods for child training. *Behavioral Disorders*, 1979, *4*, pp. 116-130.

Postman, N. and Weingartner, C. *Teaching as a Subversive Activity*, New York: Dell, 1969.

Reith, H. and Hall, R. V. (Eds). *Responsive Teaching Model Readings in Applied Behavior Analysis*, Lawrence, KA: H & H Enterprises, Inc., 1974.

Robinson, N. M. and Robinson, H. B. *The Mentally Retarded Child*. New York: McGraw-Hill, 1976.

Rogers, C. *Freedom to Learn*. Columbus, Ohio: Charles E. Merrill Publishing Co., 1969.

Santogrossi, D. A., O'Leary, K. D., Romanczyk, R. G. and Kaufman, K. F. Self-evaluation by adolescents in a psychiatric hospital school token program. *Journal of Applied Behavior Analysis*, 1973, *6*, pp. 277-287.

Skinner, B. F. *Science and Human Behavior*. New York: The Free Press, 1953.

Stokes, T. and Baer, D. An implicit technology of generalization. *Journal of Applied Behavior Analysis*, 1977, *10*, pp. 349-367.

Thorenson, C. E. and Mahoney, M. H. *Behavioral self-control*, New York: Holt, Rinehart and Winston, 1974.

Turkewitz, H., O'Leary, K. D., and Ironsmith, M. Generalization and maintenance of appropriate behavior through self-control. *Journal of Consulting and Clinical Psychology*, 1975, *43*, pp. 177-583.

Willis, J. and Giles, D. *Great Experiments in Behavior Modification*. Indianapolis IN: Hackett Publishing CO., Inc., 1976.

Winett, R. A. and Winkler, R. C. Current behavior modification in the classroom: Be still, be quiet, be docile. *Journal of Applied Behavior Analysis*, 1972, *5*, pp. 505-510.

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[1] A *countoon* is a recording device on which behaviors are represented by cartoon figures. The student uses the countoon by marking the picture which represents whichever behaviors they are exhibiting.

Dispositional Attribution in Behavior Disordered Children

Pnina Goldfarb

INTRODUCTION

Diagnosis and treatment of disturbance from an ecological frame-work means that the interface between the child and his/her ecosystem is investigated. This interface may be seen as the interaction the child has with parents, school and community. The quality of this interaction, is first and foremost based on the ability of the individuals to systematize, organize and evaluate accurately personal and societal events. People are not dispassionate observers of human behavior. They attempt to understand the behavior of others by explaining it, making value judgments about it, and determining what it means for them. This is done by attributing characteristics and underlying dispositions to a person or a group. This process of evaluating the behavior of others and attributing specific traits to them is called attribution. Dispositional attribution serves two purposes; to increase the perceiver's understanding of behavior and to increase the perceiver's ability to predict what the actor is likely to do in the future (Shaver, 1975). This process of dispositional attribution helps to organize and make sense of an otherwise unpredictable world.

Behavior disordered children appear to have a greater difficulty with dispositional attribution than other children and therefore also have difficulty understanding and predicting future events. A typical occurrence in a classroom for the behavior disordered is when one student accidentally bumps into another student and the behavior is misinterpreted as a personal assault. This misinterpretation of reality creates conflict and unpredictability for the student.

Attribution theory attempts to specify the process a perceiver uses to explain and predict the behavior of others. There are three basic stages of the attribution process. The necessary first step is the observation of an action. The perceiver may observe the actor in person, may view a representation of the action (film) or may gather information in some less direct manner (in writing, an account of an observer, etc.). The further removed from the action and the more the perceiver relies heavily on the information provided by intermediaries the greater the potential for misinterpretation of the action. However, without some form of observation, no attribution will take place. It is the basis for later attribution.

However, not all observed behavior is attributionally meaningful. To be useful an observed action must be judged to be an intentional act. Involuntary, routine or habitual actions are not considered intentional. They do not reveal much information about the underlying disposition of an individual. To be attributionally valuable an action must be judged to have originated from

an intention. The more careful perceiver will rely on his assessment of the circumstances surrounding the action, and on his own past experience as an actor in similar situations to arrive at a judgment of intention. This is the second step in determining dispositional attribution.

The last step in this process is the dispositional attribution. A dispositional attribution is necessary because it answers the question of why an action has taken place. The action can either be attributed to environmental conditions (a product of the situation which would only be repeated under similar circumstances) or a personal disposition (personality characteristics of the individual). Attribution theory attempts to specify processes within the perceiver that are involved in his explanation and prediction of the behavior of others. At each step toward personal attribution, the perceiver adds to his understanding of the action his ability to predict its future occurrence. According to Kelley (1972), it must be determined whether the action of others are attributable to internal factors (personality characteristics), external factors (environmental stimuli) or transient factors (unique to a specific situation or moment in time). This determination is made by means of a principle of covariation between potential causes and effects along a three dimensional model. First, the perceiver makes a judgment of distinctiveness of the stimulus. Distinctiveness refers to the extent to which this person reacts in the same manner in other situations, or to similar stimuli. The perceiver also makes a judgment of consensus. Consensus is the extent to which other people act in the same manner as the individual in question. Finally, the perceiver makes a judgment of consistency. Consistency is the extent to which this person acts in the same manner on other occasions. Using the principle of covariation, the perceiver is most likely to attribute the actor's behavior to internal causes (dispositional attribution) under conditions of low consensus, high consistency and low distinctiveness. While attributions to external causes would be made under conditions of high consensus, high consistency and high distinctiveness. Attributions of transient factors are made under conditions of low consensus, low consistency and high distinctiveness.

An example of a dispositional attribution can be made when observing a teacher yelling and reprimanding a student in the school hallway. If no other teacher has ever been seen reprimanding this student at other times, the consensus that the student is a "trouble maker" is low. If this same teacher has been seen reprimanding this student in the past, the consistency of the teacher's behavior is high. If the teacher responds to other students in a similar manner, the distinctiveness of this action is also low. It can be concluded that the teacher's reprimand, can be attributed to a personal disposition (dislike for students, low frustration tolerance, or simply mean) rather than to environmental conditions, such as student misbehavior.

Attributional bias and error is possible at every step of determining a dispositional attribution. Additionally, all individuals make errors in attribution. However, behavior disordered (BD) children, especially those that are basically aggressive (acting out), potentially can make more errors in attribution due to their unique combination of behavioral and personality characteristics. Singlely, this misattribution becomes a characteristic of the disturbed child.

The first element in the attribution process is the observation of action.

Shaver (1975) suggests that to avoid bias at this stage of attribution the perceiver must try to put aside personal expectation and prejudice and compare the description of the situation with others. The perceiver must also try to form an impression based on complete segments of behavior rather than little bits of information. All this may be very difficult for BD children. First of all, these children unconsciously distort actions due to their psychological needs and motivations. Their self-concepts and self-esteem are very low. They have need for great amounts of emotional support and are developmentally immature which suggests elements of egocentricity. Therefore, it is virtually impossible for them to put aside their own motivations to make a more accurate attribution. Behavior disordered children may also have difficulty attending to all situational detail and the actor at the same time. In many instances these children are unfamiliar with the situation. They are unable to draw from their own past experiences to gain insight into the situational circumstances. This may be due to a BD child's limited background of experiences. They also may not attend to situational factors due to the difficulty in prioritizing in order of importance situational variables. This difficulty with prioritizing is evident in the way BD children approach the learning and organizational processes. Behavior disordered children may also have problems understanding cause-effect relationships which create problems when an attribution to environmental stimuli is required. More frequently they will attribute behavior of others to internal variables because they cannot relate to environmental causes effecting the behaviors of others (only of themselves). Shaver (1975) suggests that due to the primacy effect we need to try to take in entire behaviors rather than segments. Many BD children are characteristically impulsive and distractible which makes it very difficult for them to gather much information. Frequently they will judge behavior based on small samples of behavior.

To prevent error in the judgment of intention, the perceiver must determine whether there exists plausible goals for the action and whether the actor is exerting himself in the direction of the goal. Additionally, the action must occur in the immediate vicinity of the actor (Shaver, 1975). Using Kelley's model (1972) of attribution, the judgment of intention follows along three conceptual lines which aid in determining if there are plausible goals and if the actor is deliberately moving toward these goals. BD children again have difficulty making judgments along all three dimensions of Kelley's model. With respect to the judgment of distinctiveness, a BD child may have problems determining if the behavior is evident across many situations due to inhibiting characteristics (hyperactivity, impulsivity, distractibility and difficulties making generalizations). These characteristics inhibit concentration and cognitive understanding required to evaluate many situations in which the actor may function. Judgments of consensus are equally as difficult. A BD child, especially one that acts out, may have difficulty understanding and relating to persons in authority positions. He, in a sense, develops stereotypic views of people, especially adults. Therefore, the fact that others also behave like the actor only reinforces his stereotypic views of others and still constitutes a dispositional attribution for the actor. Difficulties with generalizations and hyperactivity which inhibits processing entire bodies of information creates problems when judging the consistency of an actor's behavior. A very common characteristic of BD children is that they

TABLE 1

Observation of Action

Integrities	Interfering Characteristics	Intervention Strategies
1. Puts aside personal expectations and prejudice.	1. Has difficulty putting aside ones own motivations and needs to observe accurately	OBSERVATIONAL PRACTICE Structured—film —video —role play
	distorts actions low self-esteem } egocentricity immature	Intent:
2. Observes complete segments of behavior.	2. Observes only small segments of information.	Shaping awareness of detail
3. Compares description of situation with others.	3. Does not compare description of situation with others.	Exposure to common situational experiences
	Difficulty attending to situation and actor	Discussion of importance of situational detail
	Poor background of experience	Discussion of cause-effect relationships
	Difficulty with prioritizing	Opportunity to compare descriptions
	Difficulty understanding cause-effect relationships	
	Impulsive	
	Distractible	

have developed a generalized expectancy for external locus of control for reinforcement. One might say that due to early failure when attempting to affect their environment, they feel that what happens to them is beyond their control. According to deCharms (1968), when a perceiver believes another person to have originated an action that is harmful, the evaluation of him is more negative than if the perceiver believes that the actor is merely behaving negatively due to forces beyond his control. For a child who has expectancy for external locus of control for reinforcement, he sees other people as responsible and in control of those reinforcers. Therefore, the BD child's judgment of an actor's behavior would be more often than not originating with the person. For example, child A trips child B. Child B probably will misperceive this act to be intentional because he believes that everyone else has control of variables in the environment and capable of passing out negative and positive reinforcers including punishment.

In the final step of the attribution process a dispositional attribution is made. The attribution that is made is not between the environment in general and the person in general, but rather between a specific force in the environment and a specific personal disposition. According to Jones and Nisbett (1971) there is potential for attributional error because actors tend to attribute actions to situational requirements and observers attribute actions to personal dispositions. There is also a tendency to assign causal attributes to a disposition and to cluster personal attributes together into organized personality groups. This may account for some percentage of error in attribution. This behavior is clearly seen in the BD child who hastely stereotypes people based on small samples of behavior. They are convinced that those who deliver reinforcers (external locus of control) have certain characteristics that will be the cause of future behavior (negative). This becomes apparent when the BD child is convinced that "mean" people prevent him from experiencing events or obtaining particular items. BD children appear to have elaborate defense mechanisms that allow them to "function" and cope within their ecosystems. Defense mechanisms such as rationalization and projection would make it difficult to understand the role of the actor. This inability to take another's perspective contributes to misperception of the behavior of others. Additionally, heightened emotionality makes evaluation of the situation more difficult.

By no means is the assumption being made that every attribution a BD child makes is in error nor that every possible error will occur. Although not any one child has all these characteristics, they are typical of BD children. Misperceptions and errors in dispositional attributions is a characteristic that is frequently apparent.

This understanding is crucial to treatment. Treatment frequently incorporates a clarification of reality. With the understanding of attribution and the three processes (observation, judgment of intention and dispositional attribution) treatment could focus on the aspects of attribution that have broken down. This would be in essence a task analysis of the perceptual difficulties and the treatment would focus on the smaller component parts of the problem.

An example of intervention strategies that could specifically address the difficulties that can occur in observation of action (difficulty putting aside ones own motivations and needs, observing only small segments of behavior,

TABLE 2
Judgment of Intention

Integrities		Interfering Characteristics	Intervention Strategies
	1. *Distinctiveness*	1. Inhibited concentration and cognitive understanding to evaluate situations.	OBSERVATIONAL PRACTICE
Determine if--	Is behavior evident across setting?	hyperactivity impulsivity distractibility difficulty with generalization	Structured—film —video —role play Unstructured—actual —situational —occurrences
there are plausible goals for action.	2. *Consensus*	2. Reinforces stereotypic views.	
	Do others act in the same manner?	difficulty relating to persons in authority	
actor is exerting himself in direction of goal.	3. *Consistency*	3. Difficulty processing entire bodies of information.	Intent: Practice in determining distinctiveness, concensus, and consistency. Shaping an awareness to stereotyping behavior.
	Is behavior evident on other occasions?	hyperactivity impulsivity distractibility difficulty with generalizations	

TABLE 3
Dispositional Attribution

Integrities	Interfering Characteristics	Intervention Strategies
1. Takes role of actor.	1. Has difficulty putting aside ones own motivations and needs. emotionality projection	ROLE PLAY Intent: Practice taking the role of the actor.
2. Observes carefully situational constraints.	2. Overemphasizes the "personality" of the actor. (Does not attend to situational constraints.) generalized expectancy for external locus of control for reinforcement.	RESPONSIBILITY TRAINING Structure choices Behavior modification Value Clarification Intent: Practice using internal locus of control. OBSERVATIONAL PRACTICE Structured Unstructured Intent: Exposure to realistic situational constraints

and the inability to compare occurrences with others) are structured observational practices. These observational practices would be a presentation of predetermined segments of behavior through film, video and/or role play situations that students and teachers would discuss. The intent of these observational practices would be to: (1) slowly shape the student's awareness to situational and behavioral detail by introducing more complex and lengthy behavioral clips, (2) to expose students to more common situational experiences that they may not have personally experienced, (3) to discuss the importance or lack of importance of situational details, and (4) to provide opportunity for students to compare descriptions of situations in order to build awareness of differing viewpoints and a need for consensus (See *Table 1*).

Difficulties in judgment of intention can also be addressed through structured observational practices. However, the purpose of these observational practices would be to give students experience in evaluating the distinctiveness of situations, and the consistency and consensus of the target behavior. These observational practices must be designed so that evaluations can be made across situations and time. Actual situational occurrences that happen daily within the context of the school may also be useful material to discuss with respect to distinctiveness, consistency and consensus. As was stated earlier, a judgment of consensus frequently reinforces stereotypic views. Therefore, a different set of observational practices can be used to shape an awareness of stereotyping as a behavior. This could be done by first presenting situations in which judgments of consensus are blatantly stereotypic and then slowly introduce more subtle forms of stereotyping behavior to be evaluated. It would be important here to emphasize that judgments of consensus must be based on actual occurrences rather than stereotypic beliefs (See *Table 2*).

To make an accurate dispositional attribution the student must take the role of the actor, and observe carefully the situational constraints that influence the actor's behavior. The use of role play to practice taking the role of the actor is one method to improve this skill. Again the use of observational practice could be used to discuss the situational constraints that have an impact on people's behavior. Additionally, intervention should also include strategies to make students more responsible for their behavior. This may be done by programming structured choices, using behavior modification techniques and/or value clarification. This would help to alter the students generalized expectancy for external locus of control of reinforcement and thereby aid in evaluating the importance of situational constraints (See *Table 3*).

Practice in the three basic stages required for accurate dispositional attribution teaches students how to cognitively mediate this process which will help them to increase their understanding of behavior and their ability to predict future behavior. There is a greater potential for success when the problem of misperception of reality is not treated in a global sense but rather in relation to specific behaviors.

REFERENCES

Bem, D. J. Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental and social psychology*. New York: Academic Press, 1972.

deCharms, R. C. *Personal causation: The internal affective determinants of behavior*. New York: Academic Press, 1968.

Jones, E. E. and Nesbitt, R. E. *The actor and the observer: Divergent perceptions of the causes of behavior*. New Jersey: General Learning Press, 1971.

Kelley, H. H. *Causal schemata and the attribution process*. New Jersey: General Learning Press, 1972.

Shaver, K. *An introduction to attribution processes*. Massachusetts: Winthrop Pub., Inc., 1975.

Rotter, J. B. *Social learning and clinical psychology*. New Jersey: Prentice Hall, 1954.

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Treatment of Behavior Disorders Among Intellectually Gifted Youngsters: Case Studies with a Family-Centered Approach

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INTRODUCTION

Historically, attitudes toward intellectually very able youngsters were notoriously negative. Stanley (1974) pointed out that Thackery ". . . inadvertently may have helped coin the familiar expression 'precocious brat' . . ." as early as 1855. Among society's arsenal of stereotypic epigrams concerning gifted children were those that assured "early ripe, early rot" or that insisted a child have some compensatory deficits to balance extraordinary intellectual gifts. As a generality one supposed certain result of extreme intellectual capacity was social and emotional maladjustment.

Terman (1925) began his monumental life-time study of more than 1,500 intellectually gifted children to subject the above-mentioned stereotypes of such youths to empirical study. In spite of some acknowledged deficiencies concerning Terman's sample of youngsters, the evidence suggested that contrary to the many derogatory myths about them, brilliant children appear to be at least as healthy, physically and emotionally, as their more typical agemates. Hollingworth's (1929) work substantiated Terman's conclusions. Moreover, five-year follow-up results from the longitudinal intervention study concerning the education of mathematically able youths, initiated in 1971 at The Johns Hopkins University by Julian C. Stanley as the Study of Mathematically Precocious Youth (SMPY), have indicated that intellectually able youth are also extraordinarily active in extracurricular activities both inside and outside of school (Cohn 1980). Several outstanding examples of noteworthy professional development of a few of the earliest SMPYers suggest that these youths have remarkable resources upon which to draw for their social and emotional growth as well as for cognitive development (Nevin, 1977; *Time*, 1977). Of course these "pace-setters" represent *a forciori* illustrations; that is, without substantial social and emotional development none of these youths could have achieved as much as they had.

The Study of Mathematically Precocious Youths (SMPY) has ceased conducting its searches for precocious mathematical reasoners. (An Office for Talent Identification and Development [OTID] has assumed the talent searches under the direct auspices of the Provost of The Johns Hopkins University.) SMPY has turned its focus to the follow-up studies concerning its over 10,000 participants. Results from the first two, of eventually six, cohorts of the five-year follow-up survey have been reported (Benbow, 1979;

Cohn, 1980). Many of the youths who chose to enter SMPY's talent searches demonstrated considerable robustness under stress during several days of intensive testing to map profiles of their cognitive and affective development.

It was not infrequent that these youths and their families requested information concerning educational planning from SMPY staff members. Very rarely, in fact only a handful of times, youths or their families requested help concerning a youngster's behavioral problems. In such cases referrals were made for appropriate counseling. Upon study, it was found consistently that the underlying exhibited behavior problems were the result of familial adaptations rather than related at all to the youth's intellectual giftedness. Two briefly described case studies are included in this paper to illustrate not only the family's involvement in the evolution of these youths' problems, but also the method by which counseling was conducted.

The following cases represent an opportunity to look into the content and family-life processes of two disordered situations. What makes them special is the presence of at least one child member who is recognized as gifted and who is going through adolescence at this time. Adolescence is respected by educators and therapists as an extraordinarily challenging stage of life for people to traverse and a difficult one with which adults and parents deal. What unifies the character of these two cases is the contribution the marriage makes to insuring an environment of disorder that the "acting out" behaviors of the child honestly reflect. It is important to keep in mind that the role of giftedness in the child, while often the issue around which the parents rallied in order not to deal with the core problems of the marital relationship, in reality never functioned as a *celebrated cause* for the parents to seek help for the "special problems" of their gifted child. As soon as the problem was redefined as an issue of the adolescent need for individuation and separateness from the marriage, the family ceased to focus upon the child's intellectual ability as the presenting problem.

Once this leap in perception had been made and the environment had been dealt with as a function of a "normal" problem, the stigma of giftedness was removed within the family and a model designed specifically to treat the need for individuation (referred to later as bi-modal counseling model) was applied with good outcome. Perhaps the most significant result of case efforts 1 and 2 was the placing of giftedness outside the context of maladjusted or maladapted behavior.

BI-MODAL COUNSELING MODEL

The Bi-modal Counseling Model is borne out of a blending together of the concepts of adolescent individuation of Redl (1966) and Laurich, and Conti, (Conti and Laurich, 1975). Redl, who ran a series of residential child care centers in post-World War II Germany, recognized the need to supply adolescent children who were removed from their families with several adult supervisory persons rather than Mother/Father surrogate parents. He reasoned that the major task of adolescence is to move away from the family into adulthood over a period of several years. To force a teen-ager to relate to supervisors as parents is contra-social and contra-biological to the demands of their age-level. By placing a set of supervisors in positions of care

and availability for the adolescent, the teen-ager has options for seeking and choosing adult models of behavior and problem-solving which he or she senses or concludes are appropriate in style and content for the kind of person into which she or he will develop. This process of supplying options to the adolescent is referred to by Laurich as "diluted parenting."

The bi-modal concept is a modification of the process of dilution required by the adolescent, gifted or otherwise, for growth and individuation. In its one variation or adaptation, bi-modal interventions may be used by institutions with resident populations; another, and the one applied in the two cited case examples, is the application to the still-intact family containing an adolescent who is in reaction and who is struggling to face the evolution of "becoming a separate person." Bi-modal intervention is structured around the conjoint application of a two-person team of compatible educators, counselors, or therapists to the nature of the family problem. While occupying separate rooms Counselor A meets with the parents at the same time, in the same place as Counselor B who works with the adolescent. The very structure of the bi-modal model reflects the need of the parents to let go of their child by giving him or her up to the other Counselor. They can do this because they are meeting with their own Counselor whom they know works closely and well with their teen-ager's Counselor. They can "trust" that their messages about their child will reach the other Counselor because of the relationship within the model. The teen ager perceives that he or she has his or her "own" Counselor who isn't shared by the parents. This stresses the feeling of dilution and individuation craved by this age group. The child also knows that he or she can "tell" on the parents without having to suffer retribution and can get messages across which could never be sent in a face-to-face child-parent transaction, given the usually low-level of verbal messages emanating from adolescents.

Finally, the strength of the bi-modal intervention, which can be its weakness, is the compatibility and cooperation of the counselors. They must converse before and after each family session so that the agenda remains on course and so that they don't get pulled by the child or parents into an alliance against the "other team." Rather, the counselors' strength and greatest service remains in preserving their own individuality so that individuation is effectively modeled to the adolescent. The parents can then move on to the recontrasting of the marriage as it enters a new stage in its life in which the children cease being the center of family functioning.

CASE NUMBER ONE

This family consists of an intact marital dyad and three siblings, all male (15, 14, and 11 years of age). There were 25 contacts of which the last three were bi-modal intervention model. This family was referred ostensibly because the parents, two of whose three children were quite intellectually gifted, did not know what steps to take in planning their children's education. Upon initial interview it was quite clear that this was a problem-plagued family with regard to its internal dynamics and that educational issues were more a symptom than a cause for intervention.

Weekly visits to the home were made by the social workers. It became apparent that the parents were overwhelmed with three boys, two of whom are

adolescents and one who is seizure-disordered, somewhat hyperactive and physically large for his 11 years. Compounding this is the fact that the marriage appeared never to have been good (and they had to get married). Father longed to have "normal" athletic sons and spent long periods dwelling upon his family's Southern-traditions and heritage as a compensation for his self-concept problems. Mother was continually preoccupied with her weight and figure, both parents worked and all three boys went to private school. They had managed, in the face of all their own disappointments, to make their individual schedules so busy and at odds with each other's that they spent little or no time together.

The focus of treatment was to get father to accept his three sons' various personalities and talents and for him to let go of his desire to stigmatize their differences. Because mother gladly joined in accomplishing this goal and because their relationship was so poor, father reacted defensively. After prolonged efforts to get the family to function in a coordinated and caring manner, a bi-modal intervention was structured with all three sons being seen together by a clinical psychologist and the parents by the social worker.

The change in the self-concept of the boys and their behaviors was immediate. Their relationship with each other became less competitive and they spent less time getting involved in their parents dilemmas. Unfortunately, father became upset at the prospect of having to deal with his marriage and bailed out of therapy. The social worker's contact with the parents was terminated but the boys continued to see the psychologist. Contact with them two months after work with the parents had ceased indicated that the boys were progressing very well and their coping skills had continued to increase.

CASE NUMBER TWO

This family consisted of an intact marital dyad and two siblings, one male (14 years old) and one female (12 years old). There were 27 contacts of which the last twelve were bi-modal intervention model. This family was referred because of severe acting out behaviors of the son in the home. Much of this activity was focused on the mother in which, in response to her desire to control her son's behaviors and career goals, her son would violently assault her. Father, in reaction to this behavior, would counter assault the son. The daughter had managed to remain outside this pattern.

Fifteen contacts were made to the home with the objective of family therapy. While members were willing to attend, the needs of the individuals and the marriage were so great that greater therapeutic leverage was required. The real client in the situation became the marriage but the parents had managed to camouflage their problems by bringing their son in between them and using him as a conduit of psychological battle. The objective of therapy, thus, became two fold: liberate the son from the psychic entrapment and isolate the marriage from the children. It was deemed particularly appropriate to change the focus of treatment away from family therapy as the son's entrance into adolescence suggested the goals of increased functioning and independence outside the family.

The bi-modal intervention was structured around the teaming of a psychiatrist and a social worker. The psychiatrist focused his work on the son and the social worker on the parents. The structure of treatment was concurrent meetings of all clients with their respective therapists at the same location in different offices. Each visit was preceded by a brief planning session between the therapists and also followed by another brief conference. In a general sense, it was decided that any work to be accomplished would reinforce the idea that the son had his own therapist and the parents had theirs; that if there were any intra-family issues, each client was to bring them to his or her own therapist.

The outcome of this coordinated bi-modal intervention was a highly leveraged program for behavior change. The son ceased his violent acting out behaviors, reported increased socialization at school and in the neighborhood. Unfortunately, as a consequence of the son's changes, the marriage became very unstable. This often occurs when the member of a pathological behavior pattern changes their adaptive responses. Reactivity in the marriage took the form of fighting between the parents. This degenerated into a schizophrenic break experienced by the mother, resulting in a two-week hospitalization in a psychiatric facility.

Upon her release, she remained on medication but did not take it reliably. The father experienced a panic reaction to all of these changes and began rationalizing withdrawal from treatment. He claimed that his withdrawal was based on expense, although insurance coverage was excellent.

At the point of termination, mother was still on medication under the care of a family doctor. The marriage was superficially intact. The daughter who had remained outside of the family's events was unchanged, and the son had ceased all violence and had become quite socially well-adjusted.

One year later, the son contacted his psychiatrist by phone (he had had a phobic response to telephones prior to treatment) to report he was quite popular at school and to discuss via a one-appointment visit, his plans for the future.

The above case studies suggest a strategy for positive intervention in treatment of some types of behavior problems exhibited by intellectually able youths. By providing ego support for the child and distracting the parents to deal with their concerns, individuation and effective separation (necessary for growth) appears to be facilitated. In these and other situations, the bi-modal counseling strategy also appears to have offered system-wide support within the family for the youths' often atypical scholastic behavior appropriate for his or her intellectual and, ultimately, social and emotional growth. It seemed that when the need for respect and non-judgmental support was met in intellectually precocious children, they tended to prosper, often in spite of their parents. It also appeared that parents were relieved by having someone help them with their "problem" children, when they themselves had been unable to do so. Above all, with intellectually precocious children a little went a long way. Their extraordinary ability to learn appeared to extend also (at least in the two cited cases) to their social and emotional growth. Of course, continued study is demanded to determine whether or not such a tentatively suggested strategy is worthy of continued use.

REFERENCES

Benbow, C. P. Preliminary findings of the Second Follow-up Survey of past SMPY talent search participants. *ITYB* (Intellectually Talented Youth Bulletin), 1979, *5*, pp. 1-3.

Cohn, S. J. *Two components of the Study of Mathematically Precocious Youth's intervention studies of educational acceleration: Chemistry-physics facilitation and longitudinal follow-up.* Unpublished doctoral dissertation, The Johns Hopkins University, 1980.

Conti, N. V., and Laurich, I. W. Personal communication, December 6, 1975.

Hollingworth, L. S. *Gifted children: Their nature and nurture.* New York: Macmillan, 1929.

Nevin, D. Youth prodigies take off under special program. *Smithsonian*, 1977, *8*, pp. 76-82.

Redl, F. *When we deal with children: Selected writings.* New York: Macmillan, 1966.

Stanley, J. C. Intellectual precocity. In J. C. Stanley, D. P. Keating, and L. H. Fox (eds.), *Mathematical talent: Discovery, description, and development.* Baltimore: The Johns Hopkins University Press, 1974.

Terman, L. M. Mental and physical traits of a thousand gifted children. *Genetic Studies of Genius*, Vol. I. Stanford, California: Stanford University Press, 1925.

Smorgasbord for an IQ of 150. *Time*, June 6, 1977, p. 6.

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